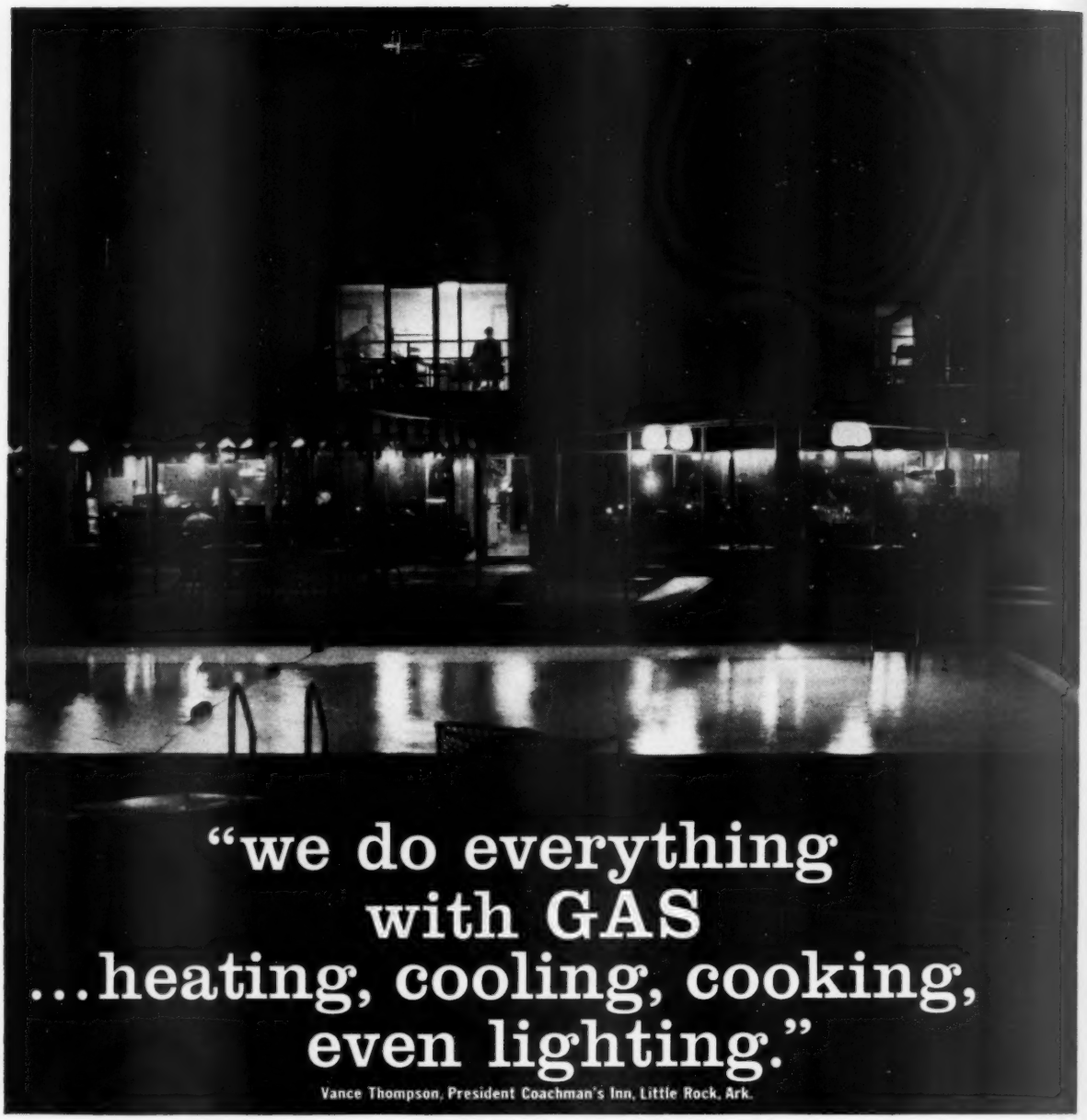
AMERICAN GAS ASSOCIATION

Monthly

JUNE
1960



"we do everything with GAS ...heating, cooling, cooking, even lighting."

Vance Thompson, President Coachman's Inn, Little Rock, Ark.

The new Coachman's Inn...a 258 unit downtown motel in Little Rock . . . is the last word in ultra-modern convenience and comfort. In the words of satisfied guests, it has everything.

And everything there that depends on fuel depends on GAS, the most flexible modern fuel. Even the electricity used at the Inn is produced by a gas-driven generator!

Year 'round air conditioning for the Inn starts at a gas-fired boiler. In summer this boiler furnishes the source of energy for a series of Arkla-Servel gas absorption cooling units. In winter the same gas-fired boiler heats the Inn.

Air-conditioning is only part of the job for gas at the Coachman's Inn. Gas cooks the meals. Heats all water, including the swimming pool. Illuminates the decorative Arkla Gaslites. And, in gas flambeaux, adds a dramatic touch to the beautiful Sunken Patio.

No wonder the owners say, "We do everything with GAS." If you plan to build or modernize any building, check the efficiency, flexibility and economy of gas. Gas absorption cooling can put your heating plant on a year 'round paying basis.

For specific details, call your local gas company, or write to the Arkla Air Conditioning Corporation, General Sales Office, 812 Main Street, Little Rock, Arkansas. AMERICAN GAS ASSOCIATION.

FOR HEATING, COOLING, COOKING ...GAS IS GOOD BUSINESS!

• This advertisement appeared in NEWSWEEK, April 4; AMERICAN MOTEL, March; CONSULTING ENGINEER, June; AIR CONDITIONING, HEATING & REFRIGERATION NEWS, April 11; ASHRAE JOURNAL, April

A. G. A.'s Chet Stackpole and Whirlpool Corporation's Roy Howard pose with freckle-faced star of CBS-TV's "The Secret World of Eddie Hodges"

IT WAS the privilege of some of us on the A. G. A. staff to visit the CBS television studios during the shooting of "The Secret World of Eddie Hodges." To a man, we were tremendously impressed with the all-around talent, cooperativeness and "All-American boy" charm of the young star. Eddie Hodges, in our opinion, is a kid other kids will like and admire, and one whom adults will love. Which makes "The Secret World of Eddie Hodges" a show for everyone. The other great stars, such as Jackie Gleason, Boris Karloff, Bert Lahr, Hugh O'Brian and Janis Paige, an inspired script, and some terrific production numbers, also help to make June 23 a night to remember on your TV schedule . . . if this sounds like a plug for the show, that's only because it is—but it is given without benefit of payola. . . . Incidentally, when the artist was assigned to do the lettering on the barrel in the cover picture, he was asked to make it look like Eddie Hodges' own writing. We expected something much more childlike—but, as we said, Eddie is a very precocious kid. . . . To get around to this month's contents, this could be called the "Big Conference Issue." . . . The problem is always how to do justice to 100 or more conference speakers in a short article. . . . Well, we try.

JAMES M. BEALL
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VOL. 42 NO. 6

• The "American Gas Association Monthly" is published 11 times a year, monthly, except in July and August, when there is a bimonthly issue, by American Gas Association, Inc., 420 Lexington Avenue, New York 17, N. Y. The publication office is located at 73 Main Street, Brattleboro, Vt. Address communications to 420 Lexington Avenue, New York 17, N. Y., including manuscript copy for publication. The Association is not responsible for statements and opinions contained in papers and discussions appearing herein. Cable addresses: American Gas Association, "Amerigas, New York"; American Gas Association Laboratories, "Amerigaslab, Cleveland." Annual subscription: $5 domestic (United States and Canada) and $6 foreign. Second class mail privileges authorized at Brattleboro, Vt.

POSTMASTER: Send Form 3579 to American Gas Association 420 Lexington Ave., New York 17, New York.

• Leak detector developed by Elizabethtown Consolidated will be shown in Gas Company Developments section

• Gas engine driven air conditioner will be part of A. G. A.'s PAR Research display

• All-new gas refrigerator by Whirlpool Corp. will be in Utilization exhibit

• Magnetic tape meter reading for high-speed billing will be demonstrated

Come one, Come All

Approximately 100 significant new technical developments by manufacturers and gas companies already have been qualified and signed up for the "Festival of Flame" Exhibit at the 1960 Convention in Atlantic City, N. J., October 9-12. More than a score of additional gas utilization developments, and nearly 100 items of equipment and control devices used in the operating area, are expected to be included by Exhibit time in October.

The most spectacular show the gas industry has ever held is predicted by Christy Payne, Jr., chairman of the Exhibit Planning Committee.

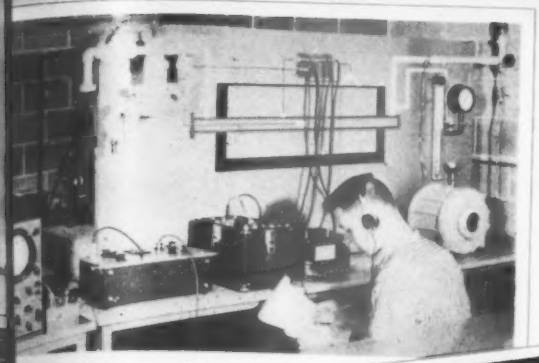
Every gas industry employee, from supervisory level to top management, will find something of interest in the 1960 Exhibit, Mr. Payne adds. Dealers, distributors, builders, architects, contractors, and financial VIP's will discover new possibilities for expanding gas service.

Specifically, visitors to the Exhibit will receive working answers to these questions:

What are the newest technical developments in gas ranges, gas house heating and other domestic appliances? In commercial cooking? In industrial heating and processing?

What improvements are incorporated in the new gas air conditioners and gas refrigerators? What are the most recent industrial and commercial applications of infrared burners? What's new in smokeless and odorless gas incinerators? In outdoor applications of gas?

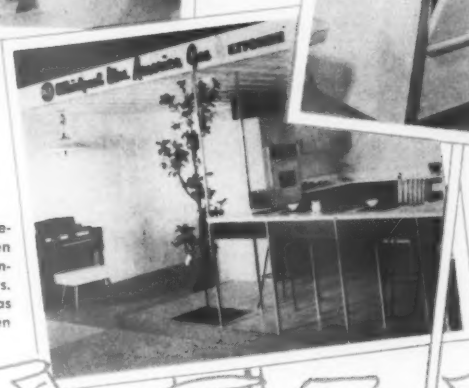
Each gas appliance and utilization device in the "Festival of Flame" has undergone exhaustive screening by the Exhibit



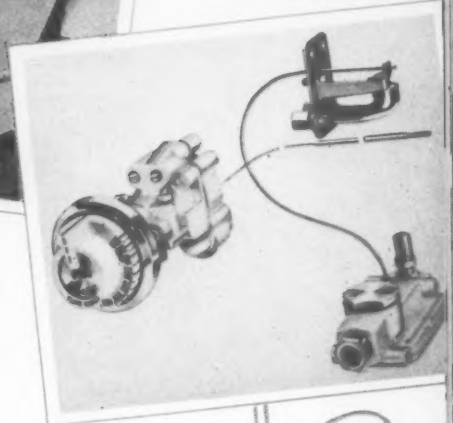
• Research display will include live demonstration of ionic leak detectors

• Crown Stove Works will show free-standing range simulating built-in construction

• Robertshaw-Fulton's low temperature oven control is among Domestic Gas Developments



• A New Freedom Gas Kitchen section will include this Mrs. America Gas Kitchen



...to the "FESTIVAL of FLAME."

Planning Committee. Generally, only significant prototypes and items judged to be significant new technical applications of gas since October 1958 are included in the gas utilization section of the Exhibit.

However, certain categories of appliances, such as gas air conditioners, refrigerators, infrared burners, smokeless and odorless incinerators, have been deemed so important that each manufacturer of this equipment has been invited to display one latest model. In addition, a special gas patio will feature outdoor applications of gas for such uses as cooking, heating, and water heating. Spectacular gas luau lamps will ring the patio area and rows of other gas lamps, some of them in clusters, will decorate the five main streets of the "Festival of Flame."

Opposite the gas patio will be the PAR Research display, featuring highlights of recent PAR Plan research activities and projects to come.

An important innovation at this year's Exhibit will be a special display of new developments which gas companies themselves have produced for their own use.

Center part of the "Festival" will be a 30,000 square foot display of the Operating Section entitled the "Mall of Flame." Here employees and allies from other industries will obtain a clear picture of the equipment and control devices used in all phases of gas operations, from exploration and supply, through transmission, storage and distribution.

Running along both sides of the Exhibit will be a handsome parade of magazine-designed New Freedom Gas Kitch-

Your Harvest of Ideas

ens and Laundries, featuring many exciting refinements in current styling and design.

The following companies have already accepted invitations from the Exhibit Planning Committee to participate in the "Festival of Flame":

1. Manufacturers of Significant New Technical Developments in Gas Utilization:

Arkla Air Conditioning Corp., Little Rock, Ark.
Bryant Manufacturing Co., Indianapolis, Ind.
Carrier Corporation, Syracuse, N. Y.
Comfort Products, Inc., Dallas, Texas
Controls Company of America, Schiller Park, Ill.
Crown Stove Works, Chicago, Ill.
Empire Stove Co., Belleville, Ill.
Hardwick Stove Company, Cleveland, Tenn.
International Register Co., Chicago, Ill.
Maxitrol Co., Detroit, Mich.
Maxon Premix Burner Company, Muncie, Ind.
The Maytag Co., Newton, Iowa
Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.
Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill.
National Cornice Works, Los Angeles, Calif.
Norco, Inc., Los Angeles, Calif.
Norge Sales Corporation, Chicago, Ill.
O'Keefe Merritt Co., Los Angeles, Calif.
Perfection Division, Hupp Corp., Cleveland, Ohio
Red-Ray Manufacturing Co., Cliffside Park, N. J.
Rheem Manufacturing Company, Chicago, Ill.
Robertshaw-Fulton Controls Company, Richmond, Va.
Geo. D. Roper Corporation, Kankakee, Ill.
Selas Corporation of America, Dresher, Pa.
South Bend Range Corp., South Bend, Ind.
Specialities Appliance Corporation, Chicago, Ill.
Suburban Appliance Company, Morristown, N. J.

(Continued on page 43)

Gas company sending 40 employees to Atlantic City Convention

John Kean, vice president, Elizabethtown Consolidated Gas Company, had this to say about the forthcoming Exhibit:

"As other industries hesitate on the brink of a new decade, the gas industry pushes forward to the 'Soaring Sixties,' a future made possible through such cooperative programs as this year's Gas Company Developments Section of the 'Festival of Flame.'

"Elizabethtown Consolidated Gas Company is proud to be participating in the Gas Company Developments Section with a device invented by one of our employees, Dennis J. Manning. This device known as the 'ELF' is a sonic leak detector which enables the operator to amplify the sound of escaping gas and thereby locate leaks on mains and services. The 'ELF,' as an additional tool for the location of gas leaks, has proven invaluable to us and, as such, we feel it may be of help to others. We have found exchange of such information and innovations invaluable to the operation of our company.

"Here at Elizabethtown we are proud not only because we have an exhibit in the 'Festival of Flame' but also because our company has recognized the value of this mutual exchange of ideas and has already registered forty of our employees for this year's convention."

(Signed)
JOHN KEAN

Ready on the set . . . lights . . . action . . . camera!

Bonnie Cragin, teen-age star of "Do Come to D
meets her cameraman, Bob Bailey, of Houst

Producer Alan Smith of Brooklyn Union and Wil
terback of LIVING explain scene to star and c

Ellen Bridges, A. G. A. Home Service counselor, presents plaque to Edith Brazwell Evans, editor of LIVING, joint sponsor of film

Teeners cook with gas in Home Service film

If a girl sees a fellow in a movie, and she thinks he's "just the greatest," what could be more natural than to write him a fan letter?

And if this teenage young lady should exaggerate just a trifle in telling about herself, it's just dream talk anyway. But, if she not only tells him how attractive, charming and bright she is, but also claims to be a good *cook* and casually invites him to a home-cooked dinner, she might be moving into trouble.

Bonnie, the teenage star of the new cooking film "Do Come to Dinner," reaches the depths of teenage despair when Movie Star Warren Beaty accepts!

The half-hour, full-color movie which tells the entire story of her cooking experience (and romance) moves comfortably into an educational session for Bonnie as well as teenage audiences for whom the film was designed.

A. G. A. Special Service Representative Chet Wegener, puts a few final touches on set he helped assemble

Perishable props such as fresh flowers have to be unpacked at the last minute, adding to hectic atmosphere

As story opens, Bonnie receives a surprise phone call from movie star Warren Beaty in response to a fan letter

An S.O.S. to LIVING magazine brings helpful editors Gloria Spitz and Vivienne Morfogen to Bonnie's door

The finished movie, which had its premiere before the Public Utilities Advertising Association at New York's Waldorf-Astoria on May 11, is the result of a cooperative effort by a host of interested participants. The product is presented as a joint endeavor of the American Gas Association and national magazine *Living* for Young Homemakers, but talents were drawn from several quarters.

Playing a large part in the production was The Brooklyn Union Gas Company, which has a case history paralleling the problem of a good many other distribution companies. Brooklyn Union found that the most effective teen-selling program it had was film showings, upwards of 400 a year, before home economics classes in the schools of Brooklyn, Queens and Staten Island. The programs were so well received that, by now, showings are scheduled as far as a year ahead and have become a permanent part of the class curriculum.

But Brooklyn Union and A. G. A. found that the few teenage cooking films available were far behind the newest developments in gas kitchen equipment. And what every young girl should know about Gold Star ranges was unavailable on any educational film.

The need for a new approach to the future market among today's teenagers is emphasized by their growing numbers. There are many more youngsters today than at any time in our nation's history. No one providing, making or selling anything can ignore this big and bouncy market, because as Edith Brazwell Evans, editor-in-chief of *Living* for Young Homemakers, puts it—"This is a teenage world!"

According to *Living's* report: "Population projections show that the vanguard of the enormous crop of postwar babies is now crossing the 13-year threshold. During the next two years the number of teenagers will skyrocket 40 per cent, versus a 4 per cent gain for the total population." So the interest grows greater and impressing these future brides and homemakers with the facts about gas products.

Selling is soft in "Do Come to Dinner," making it acceptable for use in schools, but the gas cooking and gas refrigeration messages are more than amply presented. Scripts were prepared by Brooklyn Union and *Living,* with A. G. A.'s Ellen Bridges, Public Service Electric and Gas Company's Eleanor Wiese and other home economics experts doing the editing. The picture was filmed by Bob Bailey Productions of Houston, Texas, in *Living* Magazine's

Bob Bailey takes a close-up as Bonnie's friend Barbara Evans whips up a cake, under Gloria Spitz' expert supervision

Oops! . . . a sticky moment, as Barbara's nervous thumb presses just a bit too hard on a too-thin egg shell

With dinner safely taken over by the automatic gas oven and the gas refrigerator, Vivienne Morfogen shows how to set table

The table, complete with candelabra, centerpiece and punchbowl, is a work of art . . . will the dinner be?

Hungry Warren Beaty, that promise of a delicious home-cooked dinner luring him on, arrives on the dot—or is he early?

Confident that her gas appliances will deliver a perfect meal, Bonnie is poised as she greets her guest

Studios and in the Paul Wing Studios kitchen.

In the film, Bonnie learns to cook with the on-camera help of *Living* Magazine's editors, including narration by Edith Brazwell Evans.

Food Editor Gloria Spitz and Table Setting Editor Vivienne Morfogen actually go to Bonnie's home. Gloria shows Bonnie and a friend how to prepare a full dinner of Dutch noodles and veal, tossed green salad with a savory French dressing, garlic-buttered rolls, rainbow punch and a lemon cloud dessert.

At regular intervals she points out another wonderful feature of the Gold Star gas range which Bonnie's mother has in her kitchen and things the young ladies will want to know when they have kitchens of their own.

When dinner is ready, Vivienne shows the girls how to set an attractive table. The candles are ready to be lighted when Bonnie opens the door to greet her guest.

The film received enthusiastic reception not only at its gas industry premiere at the Waldorf-Astoria, but at preview showings before students and home economics teachers at Brooklyn high schools.

Prints of the color film may be ordered from the A.G.A. Home Service Department, 420 Lexington Ave., New York. Price per print is $300.

A gas company may have its own name imprinted on film for a charge of $20 for the first print, with no charge for additional imprints.

In tomorrow's world: electricity from gas

Direct generation of electrical power from gas and the newest developments in gas appliances shared the spotlight at A. G. A.'s annual Research and Utilization Conference.

A record 507 delegates from major gas utility and equipment manufacturing companies heard some 30 speakers during the three-day program at Cleveland's Hotel Carter, April 19-21.

Edward H. Smoker, vice president of A. G. A. and president of The United Gas Improvement Co., keynoted the conference with an address on the industry's expanding programs and future needs in research and product development.

Pointing out that the Battelle Memorial Institute's report covers all gas industry research, including PAR, utility company and manufacturer projects, he said, "While the report recognized the need for continuing individual utility efforts and proposed more than a threefold increase in PAR research, it also indicates the need for an even greater increase in appliance manufacturers' research in their own enlightened self-interest.

"More research in the manufacturing area would certainly seem to be necessary to augment the expanding PAR program for the mutual advantage of all branches of the industry," he continued. "In fact, significantly greater effort would appear absolutely necessary to keep up with appliance competition."

Fuel cells have now become practical devices to transform chemical energy into electricity with twice the efficiency of heat engines, declared K. V. Kordesch, group leader of Union Carbide Consumer Products Company's research laboratory. He said low-temperature low-pressure cells seem to have the widest range of applications.

Dr. Kordesch reported that such cells may be used as small batteries to produce low-wattage power, as large installations in connection with chemical plants to produce low-voltage high-amperage energy from waste hydrogen, or as residential or vehicular power sources operating with small hydrocarbon reforming units.

"While all principal systems now known have some special merits for certain applications," he said, "the big question is which one will emerge to become a commercially useful system, easy to manufacture at a reasonable cost. The best chances are predicted for a

E. H. Smoker, A. G. A. vice president and keynote speaker, confers with chairman P. W. Kraemer at opening of the conference

Dr. H. J. Rand, featured speaker at the Wednesday luncheon, chats with H. S. Blanding, who presided at the midday session

system which operates on hydrocarbons, with high current outputs."

While the time is not quite ripe for thermoelectric devices to make a major penetration into appliance and power markets, such devices could begin to appear on the market a year or two after development of better thermoelectric materials.

This view was presented by W. D. Fowler, manager of the Whirlpool Corporation's government contracts department, who told delegates further improvement of materials—particularly with respect to quality and cost of production—would widen the range of applicability of thermoelectric generators.

"Many appliances have low power requirements now served by electricity," he said. "Some of these are suited to Seebeck power generators feasible at present. If these generators were powered by waste heat, then the low efficiencies would be less meaningful and the devices now available would be practical."

Mr. Fowler forecast that thermoelectric power generation will, at least temporarily, be limited to low power applications where small size, noise-free operation and low maintenance requirements are at a premium. Use of these devices, he said, will spread to supplementary and auxiliary power applications, and to applications in remote sites, as soon as the cost of producing thermoelectric generators is reduced.

A specific application of thermoelectricity was discussed by H. C. Fischer, vice president of Thermo-Craft Corporation, who outlined his company's development of a thermoelectric-powered anode for preventing corrosion in gas water heaters.

Mr. Fischer said, "We are only a short time away from an economical, permanent thermo-powered anode for corrosion protection of glass-lined tanks that may be easily combined with solenoid valves and thermostat to provide the highest quality gas water heater ever produced."

Five speakers brought delegates up to date on the newest gas air conditioning advances during the Tuesday (April 19) afternoon session.

Tuesday speakers, from left: Wendell C. Davis, F. G. Hammaker, P. W. Kraemer, F. J. Larsen

Also on Tuesday program: K. T. Davis, F. W. Batten, C. B. Gamble, Jr., J. E. Kaufman, R. K. Eskew, R. J. McCrory

Leading off on Wednesday were Dr. H. J. Rand, Dr. K. V. Kordesch, W. D. Fowler, J. C. Griffiths, Jos. Grumer, W. B. Kirk

ate our future growth,' says GAMA president

Wednesday afternoon speakers: Julius Klein, S. C. Marshall, Morton Sterling, H. W. Springborn

Thursday morning speakers: K. B. Negler, H. T. Gilkey, H. C. Fischer, Medford Hazel, J. W. Gergel

On Thursday afternoon: K. T. Davis, G. J. Tankersley, E. H. Perry, W. H. Weber, W. R. Sarno

Summarizing six years of A. G. A.-sponsored air conditioning research, Vice President Charles B. Gamble of Alabama Gas Corporation said five major devices have emerged from the $2 million program sparked by the Association's Task Group for Air Conditioning Research.

He cited the development of the free-piston engine-compressor, recently assigned to Robertshaw-Fulton Controls Co. for manufacturing; development of a prototype adsorption unit, now being further developed by A. O. Smith Corp.; the development and marketing of an A. G. A.-sponsored long-life natural gas engine by Continental Motors Corp.; Onan's development of a 5-ton integrated engine-compressor unit, with production models to be field-tested this summer; and Southwest Research Institute's development of a two-stage absorption unit.

"The expenditure of $2 million by the gas industry has generated expenditures of $4 million to $6 million on the part of manufacturers," he said. "To these matching funds must be added the expected outlays by Robertshaw, which will total $600,000 to $750,000 during the first year of development alone.

"Our work to date has been concerned primarily with the refinement or improvement of known cycles, and with bringing these refinements to the prototype stage," he continued. "This was our initial goal, and we feel we have come a long way to meet it. As we proceed into the Sixties, however, our efforts will steadily shift to a more basic approach of finding a new or novel means of cooling with gas."

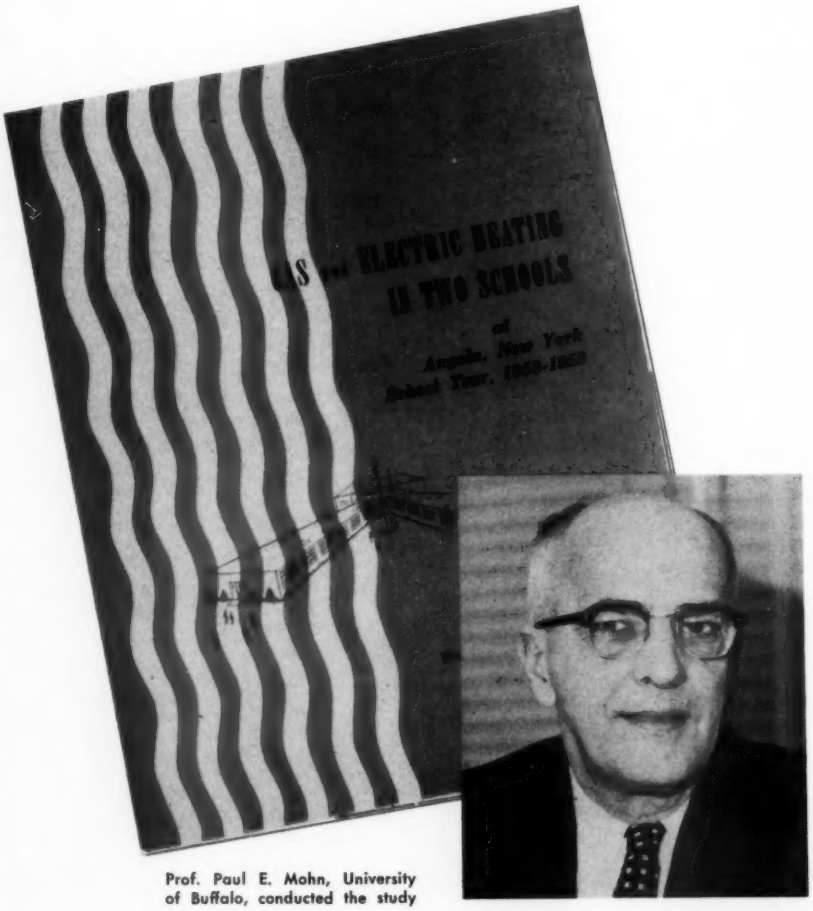
R. J. McCrory, chief of Battelle's mechanical division, also covered A. G. A.-sponsored developments in a paper on "New Prime Movers for Gas Air Conditioning." In addition, he reported on other types of motive power sources, including gas and steam turbines, the Stirling Cycle hot-air engine, and the Wankel rotary engine.

Two new systems were described by R. K. Eskew, vice president of Arkla Air Conditioning Corp., as "the beginning of a complete line of gas-fired all-

(Continued on page 35)

● *Identical school buildings at Angola, New York, provided an [illegible]rtun*

Gas wins top marks in school heating



Prof. Paul E. Mohn, University of Buffalo, conducted the study

By W. ROGER SARNO

Assistant Utilization Engineer
American Gas Association

School heating competition has begun to assume the proportions of a pitched battle.

The gas industry until recently found itself at a disadvantage because of a lack of factual comparative information. Thus, when the opportunity presented itself to sponsor an impartial and complete study of gas and electric heating, the A. G. A. Committee on Comparison of Competitive Services seized it.

The recent publication of the summary report, "Gas and Electric Heating in Two Schools at Angola, New York: School Year, 1958-1959" (hereinafter called the Angola schools report) is the result. The study was carried out by the University of Buffalo, under the direction of Professor Paul E. Mohn.

Throughout the period of the test covered in this report, each school was operated in its normal manner. Consumption data and heating costs were obtained directly from official records; the construction cost data were developed from an analysis of the financial records of the school district.

The purposes of this amplification of the Angola schools report is to furnish detailed calculations to illuminate the concise conclusions presented in the report:

(a) Heat losses are given in detail.
(b) Building construction is described.
(c) Differences in building usage are explored.
(d) Significance of these data is shown.
(e) Construction costs are further analyzed to reveal their exact nature.

The two newly opened schools presented an extraordinary opportunity for study and comparison. Designed for a pupil capacity of 600, they are functionally identical. They share the same single story floor plan. The 20 classrooms, cafeteria, and gymnasium, plus administrative and utility spaces, add up to a total of 37,300 square feet of floor area. Interior finish, furniture, and lighting arrangements were identical for

...rtunity for comparison of gas versus electricity for heating

both buildings. Located only five miles apart on the eastern shore of Lake Erie, they are subject to the same severe winter climate: 6838 degree days; a design temperature of —5°F; an average winter temperature of 34.8°F; and an average wind speed of 17.1 mph.

The W. T. Hoag school is heated by electric unit ventilators; the Highland school is heated by a gas-fired, forced hot water system.

In many ways, this represents an ideal situation for a comparative study. However, useful interpretation of the results of the study depends on a thorough understanding of the design and functioning of the systems. The two schools are not operated in the same manner. The differences are of sufficient significance to warrant considering the two schools as two distinctly different systems in spite of their similarities.

The differences which most significantly influence the energy consumption and consequent costs of heating are:

(a) The W. T. Hoag school is more heavily insulated in the walls and roof than is the Highland school. In addition, the W. T. Hoag school is built on a slab-on-grade, while Highland is built over a ventilated 4-foot crawl space.

(b) The weekly operating schedules of the two schools imposed a heavier load on the Highland school.

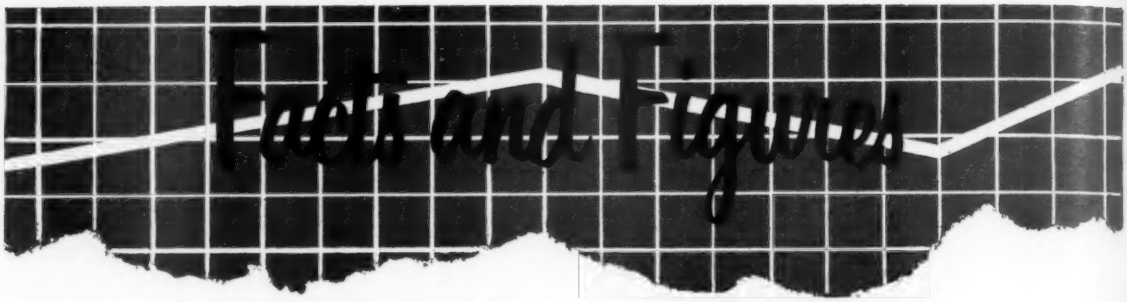
(c) The nightly and weekend setback temperatures were different; Hoag used 50°F, Highland used 60°F.

(d) The ventilation air supply was treated differently in the two schools.

At this point, a quick review of the building construction is desirable. The steel framed walls are basically of concrete block faced with brick. Spray painting on the interior face of the concrete blocks constitutes the only interior finish, except for the halls and lavatories which are finished with glazed tile. The floors are asphalt tile on a 6-inch concrete slab. The roof is a 3-inch Tectum deck (a fabricated plaster and wood-fibre board whose surface has the appearance and texture of highly compressed hay) with a hot asphalt built-up roof. The underface of the Tectum

(Continued on page 40)

Classrooms of the two Angola schools show identical construction. The Highland School room, top, was heated with gas. W. T. Hoag School classroom, bottom, was heated electrically. Exteriors, center, and entire plans of schools were closely similar, with exceptions noted in study



Prepared by A. G. A. Bureau of Statistics

March, 1960 saw the greatest total ever recorded for sales of gas to ultimate consumers—nearly 10.4 billion therms. This amount was 16.1 per cent greater than sales in March, 1959, and 214.1 per cent above the 1947-1949 average for the same month. The increase may be attributed to the growth in number of gas utility house heating customers, now totaling more than 20 million, as well as to the colder weather experienced in the country this year.

Industrial consumers used almost 3.5 billion therms of gas in March, 1960, an increase of less than one per cent over the same month last year, even though industrial activity in the nation, as measured by the Federal Reserve Board index of industrial production, increased 5.1 per cent. This differential was due in large measure to the curtailment of deliveries of gas to large-volume industrial users during periods of extreme cold weather; the gas thus diverted was used to meet the increased heating demands of residential customers. For the most recent 12 months as a whole, however, sales of gas to industrial customers has shown an annual gain of 9 per cent.

The industry spent an estimated $113 million on new construction in March, compared to $117 million in March of last year. The moderate decline for the month—3.4 per cent—was probably due to unfavorable weather conditions, rather than to a slowing in the industry's physical growth. This is demonstrated by the fact that construction expenditures for the first quarter of 1960 totaled $347 million, a 14.1 per cent increase over the $304 million spent during the same period of last year. Preliminary figures would indicate that the 1960 construction program of the gas utility and pipeline industry may approach $2.1 billion and may exceed the total for 1959 by about 20 per cent.

(Continued on page 33)

SALES OF GAS AND ELECTRIC RESIDENTIAL APPLIANCES DURING APRIL, 1960

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	April		March		April, 1959	
	Units	Per Cent Change	Units	Per Cent Change	Units	Per Cent Change
RANGES (including built-ins)						
Gas	157,900	— 4.7	171,900	+ 0.4	165,700	+11.8
Electric	—	—	156,400	— 9.4	136,100	+42.4
WATER HEATERS						
Gas	214,000	—18.1	246,100	— 7.4	261,300	+17.8
Electric	—	—	75,100	+ 0.3	71,100	+ 3.8
GAS HEATING—Total	80,704	— 9.6	79,617	— 6.3	89,246	+14.0
Furnaces	63,900	—12.7	61,500	—13.0	73,200	+49.1
Boilers	9,404	— 3.5	9,517	+15.1	9,746	+31.7
Conversion Burners	7,400	+17.5	8,600	+43.3	6,300	—12.5
OIL-FIRED BURNER INSTALLATIONS	41,492	+ 0.4	42,225	+ 8.7	41,325	+18.2
DRYERS						
Gas	—	—	29,259	— 1.7	23,800	+124.5
Electric	—	—	60,946	—11.2	43,945	+57.7

Sources: Gas Appliance Manufacturers Association, National Electrical Manufacturers Association, "Fuel Oil and Oil Heat," and American Home Laundry Manufacturers Association.

GAS SALES TO ULTIMATE CONSUMERS BY UTILITIES AND PIPELINES DURING MARCH

(MILLIONS OF THERMS)

	1960	1959	Per Cent Change
Month of March			
Natural gas	10,068.3	8,651.5	+16.4
Manufactured and mixed gas	329.7	303.6	+ 8.6
Total, all types of gas	10,398.0	8,955.1	+16.1
Residential, commercial, and other sales	6,900.7	5,489.5	+25.7
Industrial sales	3,497.3	3,465.6	+ 0.9
Twelve months ended March 31			
Natural gas	86,873.2	79,891.5	+ 8.7
Manufactured and mixed gas	2,298.2	2,453.5	— 6.3
Total, all types of gas	89,171.4	82,345.0	+ 8.3
Residential, commercial, and other sales	44,051.7	40,952.3	+ 7.6
Industrial sales	45,119.7	41,392.7	+ 9.0
March indices of monthly utility gas sales (1947-49 = 100)			
Total gas sales	314.1	270.5	+16.1
Residential, commercial, and other sales	353.2	281.0	+25.7
Industrial sales	258.6	256.2	+ 0.9
Cumulative degree days, month of March	804	575	+39.8
Cumulative degree days, season to date	4,092	3,868	+ 5.8
March degree day index (1947-49 = 100)	110.3	78.4	+40.7

Plastic pipe—how good is it?

By H. W. KUHLMANN

Battelle Memorial Institute

The use of plastics in pipe construction, adopted during World War II as a substitute, has shown a definite growth pattern during the past decade.

Originally, plastic pipe was used in services connecting consumers to gas mains. Since 1953, it has found increasing application for mains as well. Recognizing this trend toward the use of plastic materials, the Operating Section of the American Gas Association formed a subcommittee in 1952 to study such applications.

In 1956, the Subcommittee on Plastic Pipe Standards issued a report, DMC-56-16, presenting its recommendations of standards for materials and their design stresses. A recommendation for pipe dimensions made from three thermoplastics for gas distribution was included. This report was never officially adopted; but unofficially a number of plastic pipe fabricators are using the recommendations of this committee and have produced pipe according to these specifications.

In 1958, the Gas Operations Research Committee of the American Gas Association, realizing that plastic pipe usage for gas distribution was growing rapidly, particularly in some areas of the country, initiated a survey to determine what, if any, research contribution could be made by A. G. A. The Association recognized that the adaptation of plastic pipe raised certain questions: (1) Why is or is not plastic pipe being used; (2) what are its advantages over other pipe; (3) what problems have been encountered; and (4) where or how can plastic pipe be improved to meet more fully the requirements of all the gas distribution companies?

A research supervising committee (Project PG-38, "Plastic Pipe") was appointed, with Dr. F. E. Vandaveer as chairman, to coordinate this activity. The first meeting was held in November, 1958, to outline a program to provide the answers to the above questions. Battelle Memorial Institute was selected, largely because of its previous experience in the plastic pipe field, to undertake the task.

Methods of obtaining information

Pertinent information on this project was obtained from a survey of the literature from nineteen raw material suppliers, and seventeen pipe and fitting fabricators. Visits were made to eleven gas distribution companies, five plastic pipe fabricators, and five raw material suppliers.

A survey was made of the trade literature from 1945 through 1959. Plastics technical and trade literature was reviewed. In addition to the published papers, data sheets that contain properties and information on plastic pipe were examined. Engineering department and technical service reports of several of the raw material suppliers were also a source of useful information.

The gas companies visited were selected because they represented a cross-section of the gas distribution companies. Coverage included both users and nonusers of plastic pipe in all parts of the country. The pipe fabricators and raw material suppliers were selected in a way that would assure representation for all types of plastic pipe. It was recognized that contact with only eleven gas companies constituted a relatively small sampling of all the gas distribution companies. However, selection was representative and a reasonable perspective was achieved.

Results of interviews with gas distribution companies were discussed with a number of pipe fabricators and raw material suppliers. Most of them were anxious to cooperate with Battelle in any work for A. G. A.

The survey clearly shows that there is no general agreement regarding either requirements or desirable properties. This is reflected roughly on a geographical basis. Plastic pipe is being used on an operational basis for both mains and services in the southern and western parts of the country to a much greater extent than elsewhere.

Gas companies using plastic pipe on an operational basis are pleased with its performance. They have either learned to cope with the less desirable features or have found that they do not appear to be particularly significant as far as gas conduit is concerned. The general consensus of the operational users can be stated succinctly: Based on experience to date, plastic pipe is performing as well and in many ways better than alternative materials as long as it is properly fabricated and installed.

This is not intended to imply that no problems exist or that every gas company should change to plastic pipe. Nearly all the users had suggestions for improving the performance and reliability of plastic pipe in gas distribution service. Most users are concerned about the quality of the pipe (material and dimensional) and effect of conditions or environment (resistance to aging) on service life. They are most concerned about installation techniques, including fittings and over-all joint design. In general, however, the operational users are so well pleased with the performance of plastic pipe with respect to cost, ease of handling, and particularly corrosion resistance that they are willing to tolerate its weaknesses and have learned to compensate for them.

The companies who are not using plastics on an operational basis are usually in the more populous northern and eastern parts of the country. Many of these companies have examined and are

trying plastic pipe on an experimental basis. Some are considering its operational use; others have no need for it or consider the effort and risk involved to be too great in comparison to the compensation that can be expected. Most of these companies are operating in areas where local codes and practices are quite conservative and extended periods of operational data would be required to justify changes in operational procedure.

Eastern gas companies have greater and more diversified problems with gas distribution than are found elsewhere. For example, a greater variety of gases is distributed, including various types of manufactured gas, natural gas, and combinations of these types. However, the trend is away from manufactured gas at present. In other eastern areas where service connections are short (about 20 feet) and corrosion is no problem, plastic pipe is not competitive economically. It was reported, for example, that ordinary black iron pipe had been in service over 60 years without appreciable corrosion damage. Also, some eastern companies, particularly, are concerned with safety regulations demanded by public utility commissions. Some of these regulations are so stringent that years of service life data will be needed to obtain changes to permit the use of plastic pipe.

Current practices

There are three plastics commonly used for pipe in the gas distribution industry. These are polyvinyl chloride (PVC), acrylonitrile-butadiene-styrene (ABS), and cellulose acetate-butyrate (CAB). Type III polyethylene is being used, but to a much more limited extent. Each of these polymers is capable of being modified by other resins or elastomers to provide specific properties for the end item. These modifications are usually made at some sacrifice in the desirable basic resin properties. For example, Type II PVC differs from Type I in that the basic polymer is modified with a rubber. This increases the impact resistance and improves the processability but lowers the tensile strength and the resistance to creep. Type II ABS polymers, however, are the result of basic chemical modifications of the same constituents as Type I and have resulted in improved tensile and long-time strengths but at some reduction in impact resistance. The CAB plastics are available in a number of pipe-grade formulations which are believed to differ only in amount and type of plasticizer and degree of polymerization.

Current usage of plastic pipe by gas distribution companies includes both mains and services. Pipe in 2-, 4-, and 6-inch sizes was reported to be used for mains. Both PVC pipe (Schedule A and Schedule 40) and ABS pipe (Type I), Thin-wall, and Schedule 40 were reportedly used for this purpose where pressures did not exceed 40 psi. Solvent-welded joints were used throughout. For services, both direct burial and inserts, the type of plastic pipe used, and installation procedures varied more widely.

All of the more common plastics—PVC, ABS, CAB, and polyethylene (Type III)—are used for services. Standard pipe sizes are used for direct burials but, for inserts, custom fabricated

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Meet your Association staff

Nancy O'Connor

When Nancy O'Connor joined the Bureau of Public Information seven years ago, she did not leap before looking. From previous experience she knew that her days would be filled with deadlines. That's what Nancy likes about public relations and advertising. And she maintains a pace that keeps deadlines on the run.

Nancy began her association with A. G. A. in the Department of Publicity and Advertising. When that office became so large and active that its business was channeled into separate departments, Nancy went with the advertising sector. There she was secretary to Charles W. Person, who was director of advertising until his retirement in 1953.

Now, as secretary and administrative assistant to James M. Beall, director of the Bureau of Public Information, Nancy expedites public relations matters for A. G. A. She is still in her element. She still likes to work at a good, brisk tempo.

A native New Yorker, Nancy has lived for the past 11 years in Riverdale, N. Y. Her son is married and has two children, making her somewhat implausibly a grandmother.

She is more than kindly disposed to animals, attending at home to a dog, two cats, and the survivor of a pair of Java birds. She claims not to be entirely sure whether the latter pet is Mata or Hari.

Nancy is a gourmet of sorts and a frequent diner at the many fine restaurants to be found in her home town. However, she leaves culinary creation to her mother. She plays the piano and in classical music is most partial to opera.

Self-confessedly ignorant of the Gaelic tongue, she is no less faithful a standee at St. Patrick's Day parades. Even on a rainy March 17th, she reports at the side lines to see her husband march past, a proud member of the Tyrone Bagpipe Band, named for County Tyrone in Ireland.

Does she allow Mr. O'Connor to practice his piping within doors? "Absolutely," says Nancy, with patriotic conviction. In fact, she actually likes the skirling sound, she claims.

Gas company representatives, top left and right, were on continuous duty to demonstrate gas appliances. Right, table top burners and built-in ovens form one section of an "All-Modern, All-Gas Gallery."

Gas lights sell Blue Star homes

Gas lights joined the roster of gas appliances helping to sell new homes in a Houston, Texas, Blue Star Home promotion last month.

For the third consecutive year, gas equipment was featured in a majority of the model homes in the 1960 Houston Parade of Homes, while a gas equipment display dominated the adjoining Home Show. This year's event was held May 1 through 15 under sponsorship of the Houston Home Builders Association.

United Gas Corporation and Houston Natural Gas Corporation, Houston's two natural gas distribution companies, collaborated with manufacturers of gas equipment in exhibiting gas refrigerators, cooking and laundry equipment, gas water heaters, gas lights and gas air conditioners in a colorful 3600-square-foot display in the Home Show.

In 16 of the 31 Parade homes, built on both sides of a single block in Houston's fashionable new Walnut Bend addition, gas air conditioners and other gas equipment were shown in actual use. In each of the 16 all-gas homes, gas lights were used to illuminate outdoor living areas. In many of the homes gas rotisseries and open broilers were features of patios and pool-side terraces.

Emphasizing the importance of the Houston Parade of Homes and Home Show, which together comprise the largest show of its kind in the South, both RCA Whirlpool and Norge rushed first models of their new gas refrigerators off the assembly lines and into the exhibit and model homes.

Representatives of the two gas distribution companies staffed all 16 of the "All-Modern, All-Gas Blue Star Homes" from the 1 p.m. opening to the 10 p.m. closing daily. Personnel staffing the homes were carefully trained to represent builders as well as the gas companies in showing and "selling" the homes to visitors. All were coached to answer most questions on materials, construction and mortgage financing.

The official hosts and hostesses were

(Continued on page 39)

A. G. A. - E. E. I. Accounting Conference examines bookkeeping detail, broad sweep of economics

"Free enterprise—or disaster!"

Opening session speakers. From left, seated: E. H. Smoker, C. H. Mann. Standing, H. C. Forbes, J. K. Polk, Rev. W. K. Trivett, and P. R. Lawson

Dr. Nicholas Nyaradi, former Finance Minister of Hungary, was conference keynoter

Free enterprise—or disaster!

This is the hard choice facing America today.

So Dr. Nicholas Nyaradi, Director, Institute of International Studies, Bradley University, and former Finance Minister of Hungary, told nearly 1600 assembled delegates to the joint A. G. A.-E.E.I. National Conference of Electric and Gas Utility Accountants held in New York April 25-27, in a keynote address.

"I feel that never, since its foundation as an independent country, was our nation in such a great and terrible danger as it is today," Dr. Nyaradi said.

"However, the danger does not consist of Communist aggression." The threat, far more potent than that of H-bombs and hot war, is that created by ignorance and complacency in the fields of economics and politics, Dr. Nyaradi said. More likely to destroy America than communist bombs, he stated, are the internal dangers of inflation, of spreading socialism, of the abandonment of our rights as free citizens.

Dr. Nyaradi did not deny the danger of war, but emphasized that these internal threats are more real and present, perhaps because of our very unawareness of them.

"We hear a great deal about creeping inflation, and we hear that inflation has been checked," Dr. Nyaradi said. "As a so-called economist, I am far from being so optimistic. In the structure of our political and economic life, we have inflation built-in today.

"Let me tell you that I think this cancer in our American economy is about ready to undermine the very life-line of our existence.

"We all preach anti-inflation. We teach our school children to participate in thrift weeks and school savings programs. We tell our children that it is wonderful if they put their nickels and dimes into a school savings bank and get a passbook. Then they will earn from two per cent to three per cent dividends. However, we do not tell our children that because of inflation, their accumulated capital has four or five per cent less in purchasing power.

"If we do not have the courage and the fortitude to stop this cancer in our

H. Frank Carey, left, and Charles D. Davis were co-chairmen, Depreciation Accounting sub-group meeting during the conference

Plant Accounting and Property Records group. Seated, from left: A. B. Fairbank, J. W. Dodge, P. A. Ballinger. Standing, George Toward, A. W. Knight, S. B. Robertson, K. R. Watson, G. L. Springborn, H. R. Porter, P. D. Johnson

Customer Activities co-chairmen were E. K. Schneider, left, D. M. Arnold, right. Donald T. Faust was speaker

Speakers at General Activities session were, from left: Richard W. Briggs, James W. Schoonmaker, M. M. Saidikowski, George W. Fowkes

American economy, we are going to cheat our children of their birthright."

In education, Dr. Nyaradi said he opposed more Federal aid to education, but said that we must provide it in other ways. "We should see to it that education receives everything it needs at the local and state level," Dr. Nyaradi said. "We just cannot afford to come out second best behind the Russians in this deadly game."

On the erosion of free enterprise:

"We are faced with the problem of spreading socialism in our country.

"All of you here are American business men. You are employees, executives and officers of great American business companies. If the present trend in America continues, then I can see the time in 15 or 20 years when all of you present will be sitting on the curb, or in a home for the aged or in a mental institution, asking yourselves, 'How on earth did we ever get here?'

"If the present trend continues, in 15 or 20 years all of you will be receiving your meagre weekly pay checks either from your state government or from your Federal government, because America is inevitably on the road leading to socialism in our agricultural economy as well as in industrial labor and management relations.

"When the American farmer is willing to give up his birthright of free planting and free marketing for government control or government restrictions or supervision, then whether he admits it or not, he is following a socialistic doctrine straight out of Karl Marx.

"That is a tragedy for free enterprise which we all believe in and we all preach. Can't we find some other method but the socialistic one to save the American farmer from total extinction?

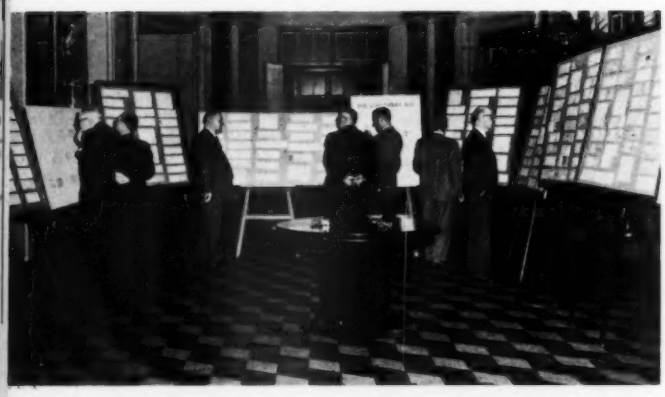
"This field of galloping socialism is even more widespread in the field of labor-management relations."

As an example of what can happen under socialism, Dr. Nyaradi said, "Take a look at Great Britain. Between 1945 and 1951 it was under a labor government, and never before was the British economy in such a state of affairs as then. Production was way down; the national debt soared; there was a loss in

Customer Accounting group: Seated, from left: C. R. Gibbons, C. W. Peters, L. H. Meyer, H. F. Luther, J. W. Jeffers. Standing: Harold Maas, Leo Murlowski, H. L. Walworth, R. B. Herrold, J. C. Lowell, E. J. Vetog, and Adam DelBono

Office Machines Exhibit included newest electronic data processing machines, computers and other accounting aids

General Activities. G. A. Brownmiller, Jack Faret, E. C. Edgar, C. D. Osterholm, J. K. Polk, H. E. Crampton, R. W. Walker, A. J. Kl



Interested delegates view main lobby exhibit displaying billing forms used by utilities throughout the nation

Accounting Employee Relations. From left, Walter E. Grinter, chairman, John J. Leary, Joseph P. Fiedler, and Donald J. Pizzimenti

Customer Relations. From left: L. Earl Smith, Thomas J. Peterson, Clyde Schrotberger, John B. White, Jr., Frank A. Daum, Dean D. Ferry

General Accounting. Seated from left: T. J. Muck, J. A. Ashe, H. H. Bollinger. Standing: C. A. Drexel, G. F. Jones, J. H. Bartley, F. M. Kehoe

Customer Collections. From left, A. J. Heuser, Rodney W. Reamy, Melvin G. Wuest, G. A. Wilson

Internal Auditing. Seated, from left: E. H. Herzog, R. H. Hallgren, A. J. Gregory, P. H. Murdoch. Standing, J. W. Schoonmaker, W. T. Mott, and R. W. Briggs

foreign respect, and Great Britain was on the brink of disaster.

"That was the reason why in the election the British people decided they did not want to live under a socialistic government.

"Today our strongest defense against Soviet military aggression, besides our strategic air fields, our missiles, our atomic bombs, and our production, is the tremendous efficiency of the American free enterprise economy, and the only reason why Khrushchev does not act is because he knows his country will be unable to match the productivity of American industry and American agriculture."

Dr. Nyaradi urged all businessmen to accept free enterprise as a personal responsibility.

"Each of you is a member of a great American community. You have a very important position in business and in your home cities and towns. You can crusade to sell the American people what America means to them, and tell them also about the dangers which threaten our American way of life. Don't miss a single opportunity to tell your people about the incredible privileges under which they live."

Dr. Nyaradi concluded: "Your responsibility is tremendous. I want to guarantee that my Johnny and Mary, and your Johns and Marys, and the millions of Johnnies and Marys in this country will grow up and live in a free, strong and happy America."

Dr. Nyaradi's message carried especial impact because of his background as a refugee from Hungary, where he was a central figure in the political and economic drama of a nation which became one of Communism's most tragic victims.

Continuing the program, approximately 130 other speakers took up the business of the three-day meeting. Following are some of the conference highlights:

In "College Education Is a Must," John J. Leary, Boston Edison Company, told the Accounting Employee Relations group of the necessity of a college education in today's business world.

Mr. Leary defined education as "a process by which the individual is developed into something better than he would have been without it. For one thing, it involves the premise that some human beings can be better than others, a supposition that is resisted in some quarters."

Responsibilities of management, he said, are: 1) to stimulate and nurture the development of those already in your employ and 2) to demand college graduates for jobs which lead to the more responsible and higher paid positions in management.

"Today, you can insist on college trained men and women to fill your openings because the supply is available, and who among you, if you had your choice, would not select the college trained.

"Experience affirms the fact that the non-college young man or woman is at a serious disadvantage in the competition for employment. Those with this handicap already know the climb up the ladder is much tougher for them.

"This means that a good many able young men and women, whose potential is good, will be passed over for the college educated. Because of their native

(Continued on page 38)

FRED A. KAISER, *CHAIRMAN* • L. J. FRETWELL, *VICE-CHAIRMAN*

School, show form double bill

One hundred and two students at the 1960 Commercial Gas School registered 100 per cent in attendance, attention

Chicago sales school for commercial gas representatives stresses creative approach to selling in a streamlined, intensive four-day course

Chicago "doubled in gas" last month, when it played host to two simultaneous gas industry events, the Commercial Gas School and the Commercial Gas Exhibit at the National Restaurant Show.

One hundred and two students checked in for the 8th biennial Commercial Gas School at the Edgewater Beach Hotel, Chicago, for the week of May 9. They came from twenty-five states and the District of Columbia. Canada also sent nineteen from Ontario.

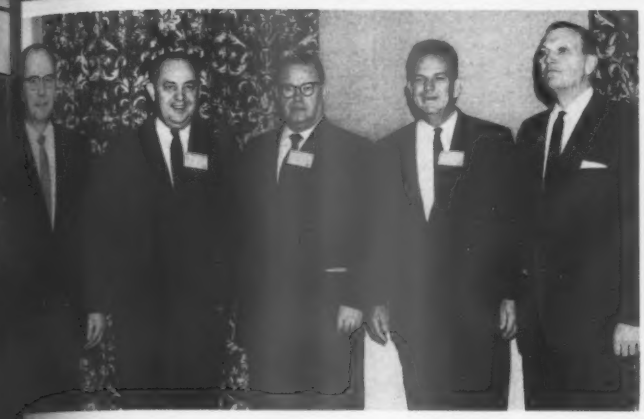
The only resemblance of the 1960 Sales School to any held in the past was that it coincided with the National Restaurant Show. This was due to the foresight of the Commercial Subcommittee of the Section's Education Committee, M. A. MacClurg, Laclede Gas Co., St. Louis, chairman. Fred A. Kaiser, Michigan Consolidated Gas Co., Detroit, Section chairman, presided on opening day when Robert L. Ingeman, The Peoples Gas Light and Coke Co., Chicago, brought official greetings from the host company.

The school was designed to provide more than basic training and to be more than a refresher course for commercial gas salesmen. The four day streamlined course provided specific product information, and knowledge on creative sales techniques and commercial selling procedures, valuable assets for the commercial representative.

In making up the program, it was decided to condense the course into four days and to supply the students with a complete reference text for the entire course as they registered. The text was used frequently throughout the school especially when the speaker referred to specific figures, tables or drawings. It will remain available as a valuable tool for commercial gas men.

Students chalked up 100 per cent attendance at all of the 8:30 a.m. to 5:00

Wednesday's lecturers at the Commercial Gas School were, from left: B. E. Burke, Dr. R. T. Ellington, M. A. McClurg, and G. T. McDonald



Speakers on the opening day were, from left, A. H. Swenson, Robert Ingeman, J. F. McCarthy, L. J. Fretwell, Fred A. Kaiser

Students also visited concurrent gas equipment exhibit at the nearby National Restaurant Show

Final day's speakers included, from left: E. A. Jahn, Roger Lidicker, Hayes Walter, M. E. Larson, and Lester A. Dubberke

p.m. sessions. Each lecturer provoked a series of questions and answers at the end of his talk.

Some highlights of the program must be noted.

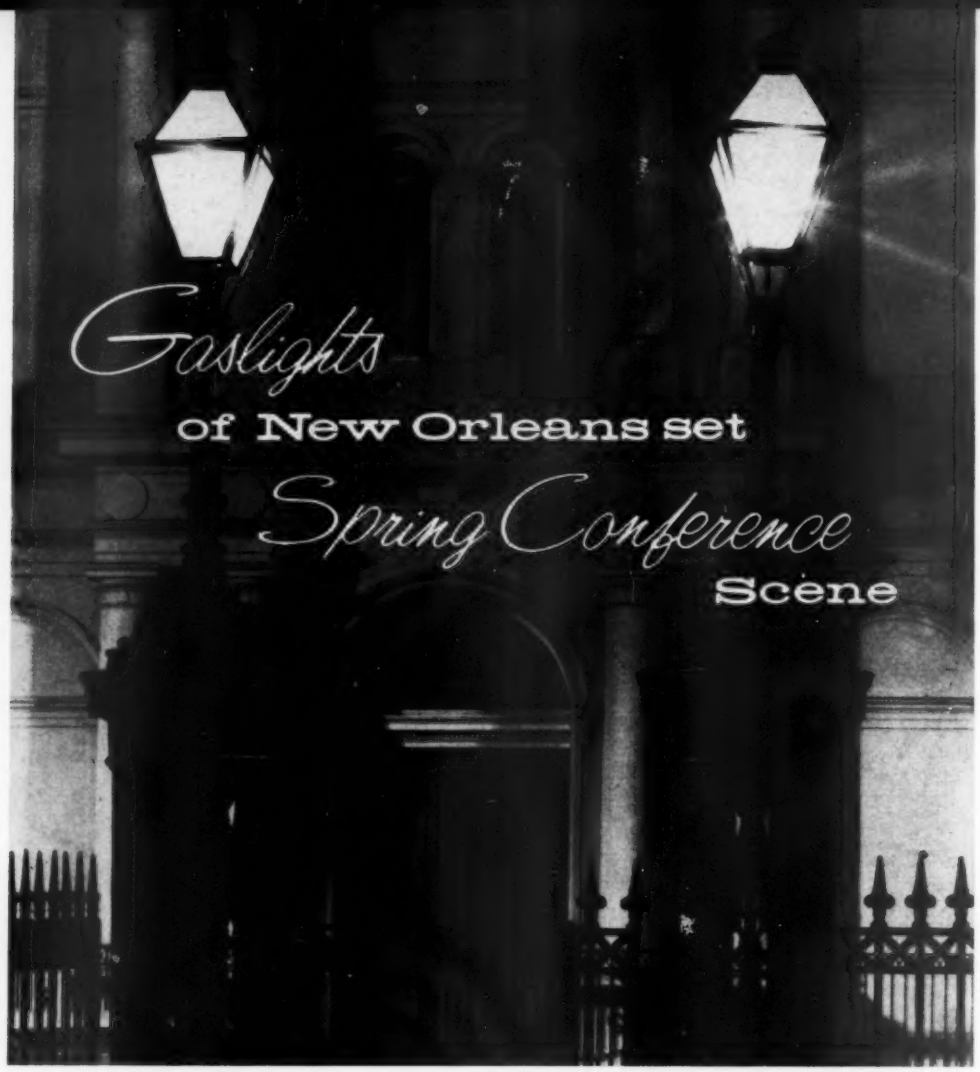
The entire afternoon of the third day was devoted to a lecture on "Creative Selling That Works," by Dr. Joseph W. Thompson, director, School of Hotel, Restaurant and Institutional Management, Michigan State University, East Lansing. This well-known authority, who is highly regarded in the volume feeding industry, gave the students three and one-half hours of professional sales training obtainable only at university level. Dr. Thompson's talk analyzed five kinds of selling: 1) Stimulus-response selling. 2) Formulized selling. 3) Wants-satisfaction selling. 4) Mood selling, and 5) Depth selling.

Through the careful manipulation of his audience, Dr. Thompson conducted a half-day session with audience participation. He created sample sales situations for the students to participate in and observe. At the end of the lecture, Dr. Thompson was given a standing ovation lasting several minutes.

Two other lectures gave special background information. One was "Sanitation Standards and Their Influence on Commercial Kitchen Operation" by M. E. Larson, staff supervisor, Southern California Gas Co., Los Angeles, who detailed the formation and activities of the National Sanitation Foundation. He told the students how these new standards would help both the salesman and the customer and how the NSF codes were being adopted by municipalities or being used as a guide for interpreting existing regulations.

The other lecture was on "Commercial Kitchen Ventilation," by E. A. Jahn, A. G. A.'s assistant director of utilization. Mr. Jahn reached the fol-

(Continued on page 37)



Gaslights of New Orleans set *Spring Conference* Scene

New Orleans, deep in the heart of America's richest natural gas producing area, was host to some 1,400 gas industry executives and operating engineers during a combined Distribution and Transmission Conference held May 9 through 13, under sponsorship of the A. G. A. Operating Section.

Approximately 150 speakers covered the latest technical developments in gas operations and the newest thinking on operating problems during 31 separate morning and afternoon sessions.

An outdoor exhibit of automotive and mobile equipment used in the gas and electric industries drew interested crowds of delegates. Thirty-two manufacturers participated in the display.

Because of its importance for safe operations, an A. G. A. Accident Prevention film, "Static Electricity," was shown every day throughout the five days, following the general sessions.

In addition to the general sessions held daily through the full week of meetings, special sessions concentrated on these specific areas:

Automotive and Mobile Equipment
Construction and Maintenance
Corrosion
Customer Service
Metering
Distribution Design and Development
Communications
Compressor Stations
Gas Dispatching
Gas Measurement
Pipelines
Underground Storage

A. G. A. President Wister H. Ligon, in his keynote address, "Let's Talk About Gas," told the operating men they have a tremendous job ahead of them in providing the facilities to meet growing energy needs and the competitive challenge of other fuels in the "Sizzling Sixties."

Mr. Ligon elaborated:

"What can we expect by the end of 1969?

"We expect to serve 11 million more customers than the 32.1 million served in 1959.

"We estimate that sales of gas will nearly double, rising to at least 15½ billion therms.

"Obviously we cannot and do not expect to deliver more gas to more customers without very substantial additions to our gas transmission, storage and distribution systems. Many of our systems, as you know only too well, are operating at full or close to full capacity.

"Because of this we estimate that we will have to add more than a quarter of a million miles to 878,000 by 1970."

The growth will not come automati-

Approximately 150 speakers at week-long Distribution-Transmission Conference range from leak detection to underground storage, past to future

cally, Mr. Ligon said, but can only come through matching, and outmatching, the competition.

"As we operate our systems in the Sixties, competition will demand that we hold down costs and increase efficiency. We'll have to be sure, for example, that we do not allow operating costs to rise to the point where they could force us to increase our prices to customers and thus threaten our long-standing economic advantage over other fuels."

Mr. Ligon congratulated the operating men on past achievements:

"During the past ten years, you have converted almost every gas company in the nation to natural gas—a monumental task well done. You have built, and now operate, nearly a quarter of a million miles of new pipelines and utility mains. You have increased our underground storage facilities five-fold, and this in turn has helped us triple the number of gas househeating customers in a single decade.

"These are solid achievements unmatched in the history of our industry, achievements in which we all take tremendous pride. We have, during the past 10 years, demanded of you the impossible—and you have delivered.

"But . . . past accomplishments, however great, are now part of our history. The phenomenal gains of the Fifties must be followed by even greater gains in this new decade, for we are working in an industry which must move full-speed ahead or risk being left behind by competitors whose pace may be swifter.

"As we see it at A. G. A., one key to the gas industry's over-all progress in the Sixties is continued success in coping with technical operating problems. . . .

"A. G. A. is now spearheading an industry movement toward higher levels of research activity, part of our program to step up the pace and move full-speed ahead.

"Within the past year, we have increased our PAR research budget by nearly 40 per cent. This year, we have budgeted $2½ million for research, compared with $1.8 million in 1959. We hope to raise our annual research outlays to a level of $6 million by 1965, as recommended by the Battelle Memorial Institute after its 1958 survey of gas industry research.

"Although our most glamorous research—at least, in the eyes of the public, is conducted in such areas as domestic utilization, air conditioning, and the industrial and commercial applications of gas, PAR research is by no means confined to those fields. A number of major research projects directly concern subjects of special interest to the operating engineer."

Projects mentioned by Mr. Ligon included orifice meter accuracy studies, extension of the range of super-compressibility tables, noise abatement at gas pipeline installations, and automatic recording and remote control.

"These projects and many others conducted by individual distribution and transmission companies indicate our industry's growing awareness of the need to streamline and update our operating procedures. They are healthy signs, clear evidence that we intend to keep our facilities and techniques in tune with the times.

A. G. A. President Wister H. Ligon, who entered gas industry as an operating engineer, was keynoter

Also on Monday program: S. W. Horsfield, Rev. E. A. Sheridan, M. Anuskiewicz, Jr., Ian Stuart. Rear: A. W. Stewart, Frederic Peters, R. W. Alexander, J. H. Dennis

Equipment by 32 manufacturers was displayed at exhibit, right. Above, 1909-vintage auto, "The Battleship," was an extra attraction displayed at hotel entrance by Four Wheel Drive Corp. Headlamps of the FWD car are gas-fueled

"There is other evidence, too, and we need do no more than leaf through the program for this conference to find it. During the next five days, nearly 150 of our best-informed operating engineers will appear here as speakers and panelists. The range of topics listed in the program demonstrates in no uncertain terms your grasp of the full-speed-ahead concept as it relates to gas operations. The new techniques, materials and philosophies you will hear discussed will, when coupled with the lessons of the past, constitute solid foundations upon which to build the future."

Speakers during the succeeding five days more than justified Mr. Ligon's prediction.

Following are a few highlights:

In "LP Gas for Cars and Trucks," Hugh Murphy, The Peoples Gas Light & Coke Company, analyzed the outlook for liquefied natural gas as a motor fuel for vehicles.

"In the last few years," Mr. Murphy said, "the subject of using LP gas for the operation of internal combustion engines has received ever increasing attention. LP gas, however, is not a startling new Atomic Age discovery that has just recently been developed. As a matter of fact, the use of LP gas for cooking and heating has been commonplace since 1926 when farmers, beyond the reach of the city gas main, found that this new fuel could provide them with the same advantages, inherent in gas fuels, enjoyed by their city cousins. Since they were required to maintain storage facilities to supply the fuel for their ranges and furnaces, it was only natural that they would eagerly welcome a method of using these same storage facilities to supply fuel for their farm equipment. It was due to this consideration that farmers adopted LP gas soon after it was first employed to operate internal combustion engines in heavy trucks, off-the-road vehicles and industrial engines.

". . . During and immediately after the war, industry began to take an increased interest in this new fuel. The Spokane, Washington, transit company was operating a fleet of 100 LP gas-

On Tuesday program: C. F. Miller, J. S. Janssen, H. C. Boone. Rear: H. T. Libby, J. E. Rench, F. E. Raglin, D. F. Hansen, C. V. Morey, R. T. Crittenden, P. C. Hoy, and H. G. Kaess

Friday chairmen and speakers. Front: R. W. Hofsess, G. C. Grow, Jr., L. R. Kirk. Rear: T. G. Humphreys, Jr., George McClure, R. T. Ellington, L. C. Cox, W. I. Blount, and E. O. Nelson

Wednesday leaders. Front: K. G. Scantling, R. L. Jones, B. T. Mast. Rear: R. M. Shepard, G. W. McKinley, J. R. DePauw, J. G. Surchek, Glenn Damewood, and Robert Marples

Heading Thursday program: Joseph Barnett, J. M. Stricklin, J. T. Innis, L. L. Elder. Rear: H. M. Flagler, J. J. Corrigan, F. B. Haverfield, S. A. Bradfield, C. W. Brown, and Cecil Van Gundy

fueled buses as far back as 1943. In the 'Windy City,' the Chicago Transit Authority placed 551 propane powered buses on the street in 1950 and in 1953 added 400 more. At present the CTA's fleet of approximately 3,200 buses has some 1,549 propane powered buses in service.

"The growth of use of LP gas for motor fuels has been impressive. In 1950, an estimated 2,242 million gallons of LP gas were produced, of which approximately 62 million gallons were utilized as a motor fuel. In 1959 an estimated 8,693 million gallons were produced, and approximately 937 million gallons were utilized as motor fuels. This represents an increased excess of 1,500 per cent in less than ten years!"

Among advantages of liquefied natural gas as a motor fuel, Mr. Murphy listed reduced fuel costs, reduced maintenance costs, reduced oil costs, and reduced noxious fumes (a potential boon to smog areas).

Among disadvantages, he listed high equipment costs, lower mileage per gallon, a lack of accessible fueling points, potential operating hazards, difficulty of starting in cold weather, and lack of uniformity in the composition of delivered LP gas. Mr. Murphy pointed out that solutions were available for most of these problems.

In conclusion, however, he stated that final judgment was still being reserved by his own company on the use of LP gas as a motor fuel for vehicles.

R. E. Eckel, United Fuel Gas Company, in "Uses of the Helicopter in Pipeline Operations," discussed fields of application for this workhorse among aircraft.

"The helicopter," he said, "is used in every phase of exploration, drilling and production. It is a versatile piece of equipment. It requires no roads, runways, airports, waterways, or rail and neither is it plagued with traffic tie-ups, bad highways, tolls, and road blocks. It can be set down in an area large enough to accommodate the rotor blades and lands on water, swamps, marshes, moun-

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Industry must sell gas on basis of superiority, service, rather than price, Eastern Sales conference told

Pipelines have gas, do sales have steam?

W. J. Miners, New Jersey Natural Gas Co., was conference chairman

C. S. Stackpole, A. G. A. managing director, delivered closing address

We have solved the problems of supply and our energy must be shifted to sales," stated Donald S. Bittinger, president, Washington Gas Light Company, in the opening address before 200 utility and manufacturer representatives attending the Eastern Gas Sales Conference in Washington, D. C. May 12-13.

Elaborating, Mr. Bittinger cited the competitive position of gas in the fuels picture and asked, "What are we waiting for?"

In outlining a program for effective selling he pointed out that "rival fuels are using costs to their advantage, and our industry must sell and promote gas under other than economic reasons."

Displaying slogans and advertising pieces put out by competitors, Mr. Bittinger urged "that gas be sold by campaigns based on durability and service superiority. And to be fully effective this promotion must have the backing of top management.

"We must develop our market potentials in the selling sixties," he stated "To do so we must accomplish two things: product improvement and strong promotion. We must also know our equipment and that of our competitors."

In conclusion he repeated the theme "What are we waiting for?" and stressed the need for increased advertising to combat gains being made by competitors.

Techniques for implementing the program advocated by Mr. Bittinger were explained in a lively and animated talk by the second speaker, Zenn Kaufman, sales consultant.

"Selling requires salesmanship, a term that defies precise definition because it is so flexible," stated Mr. Kaufman.

To illustrate, he contrasted promotion by a chewing gum manufacturer and a leading jeweler. "One extolls the virtues of his product with an immense billboard in Times Square. The other has no sign. Just a plain store front on Fifth Avenue and a well known, respected name. Yet, both are using salesmanship.

"It is the job of everyone with something to sell to find the somewhere-in-between that will be the most effective for him," according to Mr. Kaufman.

As examples, he cited the growth of specific companies and industries. In the majority of cases he linked their advancements to well timed and coordinated use of product promotion.

"To be sold or induced to purchase one piece of equipment over another people must know about a product. This means more than the fact it exists. Too

"Workshop of the Giants" panel included Jack D. Sparks, left, Robert K. Eskew, Harold P. Bull, Christy Payne, Jr., moderator

"Workshop for the Future" on gas laundries included George W. Coulter and Robert A. Modlin

"Workshop for the Future" panel on Gold Star gas ranges included Everett A. Kelsey, Lewis S. Jackson, John S. McElwain

Workshop panel on gas heating included Richard Leusch, John C. Murtha, and J. Richard Kelso

many people are down on something simply because they're not up on it," he explained.

"Salesmanship gives your product identification and a competitive advantage—when used correctly. You must dramatize your business and the thing your trying to sell. Give a personality to your product with a story that contains mystery, life, realism and conflict. Tell the story effectively and you make your product desired, remembered—and most important—asked for at the appliance store," he stated.

At the close of the general session, delegates attended workshops under a new type of program.

Rooms were provided to accommodate four groups. Delegates remained in their assigned rooms and speakers rotated to address each group on heating, laundry, air conditioning and ranges.

In the morning and afternoon sessions of these workshops, industry speakers presented the need for obtaining the "full house load" and thereby, increasing utility sales. Questions by delegates sparked active group discussions on what is being done by the gas industry and appliance manufacturers and what remains to be accomplished.

Closing the first day of meetings, delegates assembled in the main conference room for showing of a film entitled "Herman Holds a Sales Meeting." The film was an effective portrayal of how not to sell and how not to hold a sales meeting.

The workshop theme was carried over to the Friday morning meeting with a "Workshop of the Giants."

At this session, representatives of leading appliance manufacturers picked up Mr. Bittinger's lead and presented a comprehensive review of product advancements that are now being introduced and others that can be expected as the fruits of intensive research.

Robert K. Eskew, vice-president, Arkla Air Conditioning Corporation, outlined the major achievements in gas air conditioning in the first talk of the second day's meeting.

"We have been developing a flexible unit to fit any job. This is being done to eliminate the very poor method of trying to sell gas air conditioning by finding a job to fit the unit," he explained.

In a summary of accomplishments he explained the new units, how they will affect the salesman in his job and recent

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Eugene P. Mink, Mid-West Sales Conference chairman, looks over program with keynoter Wister H. Ligon, and Walter H. Kurdelski

Home Service panelists were Mrs. Jana White, left, Mrs. Flora Dowler, and Mrs. Ellen Bridges, right

H. D. Valentine, coordinator, and Keith T. Davis watch as William F. Johnson prepares for talk, "Reach for the Stars"

Speaker Gail Pinkstaff, left, is presented briefcase by chairman Mink, right, as A. G. A.'s Chet Stackpole looks on

A good salesman doesn't sell things; he sells fulfillment of dreams."

This theme, expounded by L. L. Cunningham, president of the Business Institute of Milwaukee, with appraisals of the challenges and opportunities that are facing the gas industry, reverberated throughout the two-day Mid-West Regional Gas Sales Conference at the Edgewater Beach Hotel in Chicago May 16-17.

More than 400 sales executives and home service directors from the Mid-West Council's 12-state area heard A. G. A. President Wister H. Ligon predict in his keynote address that annual gas sales will nearly double in the next 10 years.

"We expect to add about 11 million new customers by 1970, when our companies will be serving an estimated 43¼ million customers," Mr. Ligon forecast. "Sales of gas will advance from 88 billion therms to at least 153 billion. And we expect revenues to double, reaching nearly $11 billion a year by the end of this decade."

He described the past decade as "busy years, exciting and challenging and rewarding. Never have we chalked up such an impressive record of contributions to the rising standard of living."

The gas industry surged ahead through constructive action, according to the A. G. A. president. "Our companies stepped up the pace in advertising and sales promotion, in research and product development, and in all areas essential to gas industry growth."

Looking into the near future, Mr. Ligon said, "As we seek out the golden opportunities ahead in the next 10 years, we will continue to find that opportunities come disguised as hard work. The rich fruits of the Sixties will fall to those who shake the tree the hardest."

He pointed out three major jobs ahead in gas sales:

1. Make fullest use of the many valuable, new selling tools now available.
2. Step up the pace of selling activity and expand sales programs to cover every item of residential equipment.
3. Constantly talk up gas modernity, convenience and automaticity with everyone in the residential market.

"We should be enthusiastic over what we expect our research to produce five or ten years from now," Mr. Ligon concluded, "but we still must keep selling today's products to today's customers."

Chester S. Stackpole, managing director of A. G. A., also stressed the great need for increasing research and promotional activities, and for unity in a program of action to beat even tougher

Real gas genies use sales magic

View of some of the more than 400 persons attending Mid-West Sales Conference shows intense interest generated

competition during the "Golden Sixties."

Listing more targets for this decade, he admonished, "We must work to reduce socialization of the fuel industries in our country."

Mr. Stackpole emphasized that gas men should convince financial markets of the adequacy of gas reserves; keep costs down; help dealers; cultivate builders, architects and engineers; utilize home service personnel in all phases of gas sales; get every employee to sell; play up the wonderful blue flame ("The finest chefs in the nation insist on it.")

Emphatically agreeing that the gas flame is essential to modern cooking, William F. Johnson, sales manager, Hardwick Stove Company, declared, "Any woman who has seen the whistling tea kettle demonstration won't buy any range except the one that uses the clean blue flame."

This graphically proves how gas surrenders its heat instantly, he explained. "You've got it when you want it; and when you don't want it, you don't have it."

Mr. Johnson believes that appliances must be sold by their features. To be able to sell prospective customers on the features that are available, he said, the salesman must thoroughly know his product. And he suggested that the best way for a salesman to learn the features of a gas range is for him to cook with one.

He spoke on selling the Gold Star range: "No matter where you touch it, you've got something to talk about."

The "burner with a brain": "From full fast heat for deep fat frying down to warming the tiny baby's bottle to the precise temperature—Boy! have we got control!"

The keep-warm burner: "This itsy, bitsy burner, the size of a dime, cooks potatoes as fast as they can be cooked."

W. G. Wepfer, general sales manager, Arkla Air Conditioning Corporation, described outdoor residential lighting as "the most under-developed market in the nation today."

"This market belongs to gas," he said. "Gaslights not only are the greatest load builder per dollar cost we have ever had, but they sell themselves. Every light installed will sell two more in that block."

Analyzing profits from gaslighting load, Mr. Wepfer pointed out that gas usage from five to eight gaslights is equal to the average customer's consumption. Operating at 100 per cent load factor, the gaslight load thus is at

least twice as profitable as average heating gas.

He suggested that lamplighter crews be assigned routes to periodically clean and otherwise service gaslights free of charge. Sales of additional lights along their routes more than offset the 75 cents-per-call cost, he reported.

"Let's stop paying money to our competition to operate electric signs to advertise gas," Mr. Wepfer exclaimed.

"In most areas of the country, gas signs cost less to buy, less to install, and less to operate and own than a comparable electric sign," he said, "Now we can animate them. We can build signs of any design, any size, and as much brightness as you need."

Keith T. Davis, manager, gas air conditioning for Bryant Manufacturing Company, predicted that air conditioning someday will be as popular in the north as heat is in the south.

Terming gas air conditioning the answer to the summer valley, he called for a great increase in promotion, advertising and publicity to teach the public what's available and why they need it.

"It adds a new and additional load to your lines without any costs, and it keeps the meter making money throughout the year," he said.

Retaining and increasing the gas industry's share of the space heating market in the face of intensifying electric competition was analyzed by Lee A. Brand, vice president of Empire Stove Company.

"In 1957, only 29 per cent of the electric utilities promoted electricity for heat," Mr. Brand reported. "In 1959, 58 per cent, or just double, promoted electricity for heating; and during 1960, 77 per cent are promoting it."

He said electric heat advertising this year is very conservatively estimated at $20 million or more. It will emphasize cleanliness and modernity.

"We must get back into the gas heat merchandising picture, put salesmen back on the streets, train and re-train heating experts," Mr. Brand averred. "Let's sell fresh-air heating against electric heating's stale air; let's emphasize the health, comfort, cleanliness, low cost, and modernity of gas."

Gail Pinkstaff, executive vice president, National Appliance and Radio-TV Dealer's Association, declared, "Some people say dealers are entitled to a profit; but they are entitled only the right to earn a profit.

"Some people believe in making love to dealers," he went on. "We must be very careful that we don't make prostitutes out of them."

Mr. Pinkstaff singled out the biggest job facing NARDA and utilities is to improve the image of appliance dealers. "As we try to improve this image," he said, "we all must help in training better servicemen."

He reviewed currently pending legislation which would affect appliance dealers and described NARDA's positions in regard to them.

A. G. A.'s Home Bureau manager, Gerald P. Mullins, emphasized that the Blue Star Home is bringing unity to builder-utility merchandising.

These are some of the ways he listed through which utilities can help builders:

Publicity; training of builder's salesmen; advertising; television programs on new homes; bill inserts, mailings, mailing lists, aid in producing builder's mailing pieces; bus and car cards; art work and photography; billboards; press party guidance and assistance; displays of area's new homes in service offices; model home signs, promotional literature, counter cards, brochures; kitchen planning; appliance displays; home service demonstrations.

The broad range of Home Service activities and their importance were discussed by a panel led by Ellen Bridges, A. G. A. Home Service Counsellor. Also participating were Flora Dowler of The Manufacturers Light and Heat Company and Jana White, Western Kentucky Gas Company.

The women pointed out that home service representatives must be trained home economists; that they effectively sell ideas, features and benefits because they speak the woman's language; that, through home calls, they keep customers sold on gas.

Taking the women's angle on the benefits of gas air conditioning, the panelists stated that without air conditioning women's make-up fades (glamour stays with air conditioning); appetites lag; allergies react; sleep suffers; and drudgery mounts.

Sam Schneider, account executive,

Caloric builds for research and development

The new research and development center of Caloric Appliance Corp., Jenkintown, Pa., is now in full operation. A one-story masonry and curtain-wall structure, center includes an engineering and drafting department, testing laboratory, product styling department, model shop, and engineering offices

CBS Radio Spot Sales, revealed, "The secrets of cutting the cost of sales calls are improving your salesman by training in a service-directed community; giving them the tools; showing them how they fit into modern industrial marketing procedures; and then giving them the incentive to do their best."

The greatest single means for cutting sales calls costs, according to Mr. Schneider, is advertising—the use of mass communications media to pre-sell.

"Too many salesmen have passed over the fact," he said, "that sales are only a part of the complex marketing process of modern industry."

Mr. Schneider described the "amalgamated function, called Marketing" as having seven functions: Market research, product planning, advertising, sales, product servicing, marketing administration, and marketing personnel development.

"Three things happen when a sale is made," he said. "First, the possible consumer must be sold on the company . . . secondly, the product must be sold to the possible consumer . . . thirdly, someone must appear 'in person' to 'close the sale'."

Techniques of "in person" dealings were discussed by Mr. Cunningham, in his address "What Is Your P.Q. (Personality Quotient) Rating?"

He listed six principles of human relations (the number one problem in the world today):

1. Tolerance—use the word "consideration"—is the cornerstone on which all good human relations are built.

2. People object to things they don't understand.

3. No one gives you trouble, except the fellow who is afraid, who doesn't know, or who is dead wrong and knows it. No man ever became a great leader of men who did not believe that fundamentally people are good.

4. Humility is a sign of greatness and gratefulness—a lost art in America. Play yourself down and play everybody else up.

5. Most folks aren't going anywhere. No goal. The man who knows precisely what he wants and is determined to settle for nothing less is half way home.

6. Never criticize, condemn or complain. You must expect to be criticized but as leaders of men it will not pay you to criticize.

Climaxing the conference, Dr. Kenneth McFarland, consultant for General Motors, analyzed the American free enterprise system.

"We must teach employees the facts of individual enterprise," he declared. "The only reason they buy an outsider's story is because it's the only one available."

Profits are determined by how well a company serves the customer, he said, and wages should be based on how well an employee serves his company. In the long run, it is the customer who decides who gets raises and who doesn't.

"For the first time since Black Friday, the (free enterprise) rule book now is working again," Dr. McFarland said, because the customer is in control and the law of supply and demand is in effect.

He said another America would have to be built in the next 40 years because population here will double, soaring from 180 million to 360 million.

"Now that's why people are optimistic on the long look," he said.

Facts and Figures

(Continued from page 14)

The home building industry continues in the doldrums. Although April public and private housing starts of 110,400 units showed a better-than-seasonal increase over the 97,800 started in March, these totals still represent declines of, respectively, 23.4 per cent and 19.2 per cent from the same months of last year. For the private segment of the residential construction industry, the seasonally adjusted annual rate for this April was 20.9 per cent lower than in April, 1959. The average seasonally adjusted annual rate for the first four months of 1960 was 18.1 per cent below 1959.

The influence of lagging new-home construction activity is evident in the data on shipments of residential appliances from manufacturers. Shipments of gas-fired central heating equipment in April, 1960, showed a 9.6 per cent decline from 1959. Only sales of conversion burners, which are not greatly dependent upon the new-home market, registered an increase, which amounted to 17.5 per cent; shipments of warm-air furnaces and of boilers declined 12.7 per cent and 3.5 per cent, respectively. Water heater shipments for April, 1960, aggregating 214,000 units, were similarly affected, to the extent of showing an 18.1 per cent drop from last year. Manufacturers of gas ranges shipped 157,900 built-in and free-standing ranges in April. Because the replacement market is an important factor in total sales of gas ranges, this appliance was affected only moderately—down 4.7 per cent—by the new housing decline.

PERTINENT BUSINESS INDICATORS, APRIL, 1960

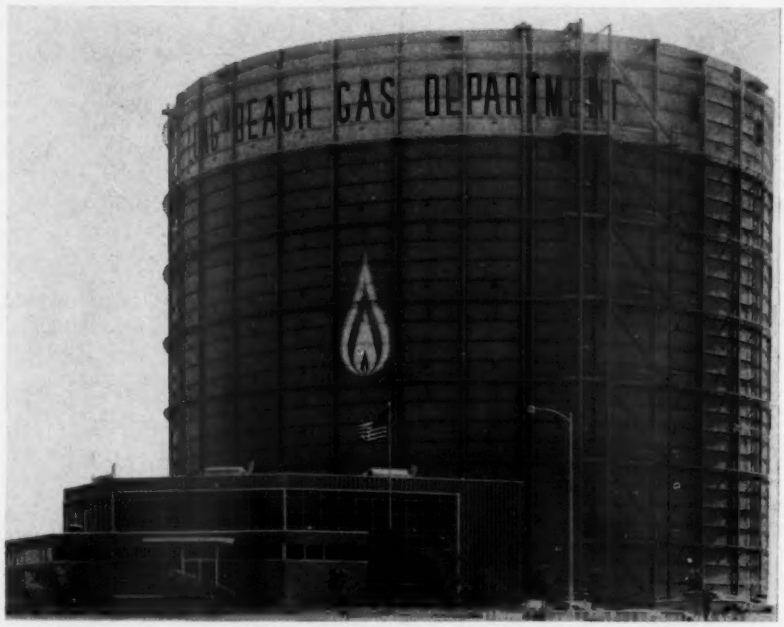
(WITH PER CENT CHANGES FROM CORRESPONDING PERIOD OF THE PRIOR YEAR)

	April			March		
	1960	1959	Per Cent Change	1960	1959	Per Cent Change
Industrial activity (1947-49 = 100)	165	162	+ 1.9	165	157	+ 5.1
Consumer prices (1947-49 = 100)	n.a.	123.9	n.a.	125.7	123.7	+ 1.6
Housing starts, non-farm (thousands)	110.4	142.2	—23.4	97.8	121.0	—19.2
New private construction expenditures ($ million)	2,854	2,999	— 4.8	2,734	2,714	+ 0.7
Construction costs (1947-49 = 100)	n.a.	174.5	n.a.	179.6	173.2	+ 3.7

CONSTRUCTION EXPENDITURES BY THE GAS UTILITY AND PIPELINE INDUSTRY

	1960	1959	Per Cent Change
Month of March	$113,000,000	$117,000,000	— 3.4
Year to date	347,000,000	304,000,000	+14.1

City adds world's largest Wiggins gas holder



The City of Long Beach Municipal Gas Department, Long Beach, Calif., recently opened a $2.5 million addition to its distributing system. A 174-foot Wiggins-type gas holder, with a capacity of five million cubic feet of gas, is part of the installation. 2,000 tons of steel were used in its construction

Eastern gas sales

(Continued from page 29)

progress in product upgrading.

He expressed confidence that "as years come on the line will be expanded to provide even greater flexibility and make available units that can meet any requirements."

Most of the present achievements by Arkla were accredited to extensive research and engineering. "At our company three per cent of every sales dollar goes to engineering. And 95 per cent of this goes to gas air conditioning," stated Mr. Eskew.

"The results of our program are the efficient, durable units on the market today. At present the equipment we are producing has less than one-third of one per cent mortality in 25,000 units."

The main problem in gas air conditioning, according to Mr. Eskew, is greater sales volume to lower production costs, thereby bringing unit prices into a more competitive position. "We need sales of more than two or three hundred thousand units in the next few years if this phase of the industry is to survive," he stated.

The second workshop speaker, Jack D. Sparks, vice-president, Whirlpool Corporation, pointed out the damage being done by negative aspects of many selling programs.

"In order to keep the gas load some companies are pushing low cost gas appliances. This is a truly short-sighted approach to business," he claimed, "for people compare and find 'cheap' gas equipment lacking the advantages of competitors."

He contended that such a policy would result in long-run loss of the gas load. It was urged that companies get behind programs such as Gold Star and develop them locally to the fullest extent. "Use every selling tool available, but make sure the appliances we are putting in homes compare favorably with rivals. Let's get the negative aspect out of gas sales and we will be doing a job that will benefit everyone."

Final speaker at the Giant's Workshop was Harold P. Bull, vice-president, Norge Sales Corporation.

In his address he pointed out that "by working together, cooperating in a concentrated effort with dealers and manufacturers, the utility can be instrumental in sparking sales drives." According to Mr. Bull one city that sold a "few hundred" gas dryers in the previous year delivered "over six thousand" in a single six-week sales drive.

Without discussing details of the various programs he mentioned other cities that had established equally astonishing appliance sales records.

"An intensive sales program can do the same for you. Merchandising and salesmanship coupled with dealer cooperation can move appliances into any city's homes," he stated.

In conclusion, Mr. Bull offered to have a Norge representative meet with any gas company interested in developing one of these highly successful sales programs.

During the discussion period that followed, all three representatives were questioned in detail on specific performance factors, extent of new equipment being offered today and how soon expansion of present lines will be achieved.

At this discussion, Mr. Bull pointed out that Norge and Whirlpool gas refrigerators now being introduced have identical absorption system units. This was achieved by cooperation of the two "giants." The result is a selling plus for dealers because only one set of parts and one type of service is required for both units.

In summing up the two-day conference, final speaker C. S. Stackpole, managing director of A. G. A., touched on every aspect of selling and promotion. He reminded delegates of the rapidly expanding gas reserves, of the new discoveries of gas deposits in Canada and Mexico.

"We have the gas reserves," he commented, "now we have to push heating, and we have to push dryers, and air conditioners and all the other gas appliances. We must make sure that the range stays because once that range goes so goes the house—and the gas load."

He called on every company to show, demonstrate, merchandise and sell gas appliances—and keep the all-gas home.

In closing he said, "we cannot be complacent. It is our job to ensure our position in the coming years and to do so means selling gas with all the energy and resources available to us."

Commercial kitchen design manual available

Are you selling commercial gas cooking and air conditioning equipment?

If the answer is yes, you have undoubtedly encountered frequent claims that gas cooking appliances in the commercial kitchen introduce a greatly added load on the ventilation system and on the air conditioning system.

A new design manual titled "Commercial Kitchen Ventilation" is now available which can help you to effectively combat such claims. The effect of gas cooking appliances is discussed in detail and up-to-date tables are included which give the rate of heat gain for gas and electric appliances located in the air conditioned area.

In addition, the manual fully covers all aspects of ventilation system design including hoods, filters, duct sizing and friction losses, fan selection, and the replacement air requirements. It is written in a simplified style, so as to be as valuable to the gas sales representative and to building and health department inspectors as it is to architects, ventilation engineers, and kitchen designer.

The 24-page publication, Catalog No. 24/U, was prepared by the Utilization Bureau of the American Gas Association, 420 Lexington Avenue, New York 17, New York and is priced at $.50 per copy.

Research conference

(Continued from page 11)

year air conditioners that will give the gas salesman a chance to go after all of the market, offering variety of equipment and versatility of application."

He presented technical data on Arkla's new 3½-ton and 25-ton direct-fired chiller-heater systems, hailing the larger unit as "one of the most significant developments the air conditioning industry has witnessed in the past 20 years.

"Development of the 25-ton system," he said, "places the gas industry in the very unique position of being out in front without competition."

J. E. Kaufman reported that a full-size, air-cooled, direct-fired lithium bromide air conditioner of the absorption type may be ready for a test run by late summer. Development of the system has been underway for several years at Southwest Research Institute, where Mr. Kaufman is manager of air conditioning, refrigeration and heat transfer.

Other speakers on the Tuesday afternoon program included Keith T. Davis, manager of gas air conditioning, Bryant Manufacturing Company, who discussed "Absorption Cooling on the Job," and H. N. Oldham, vice president of Pioneer Natural Gas Co., who outlined ways of building greater utility load through outdoor applications of gas and emphasized the significance of this load potential.

Wendell C. Davis, president of the Gas Appliance Manufacturers Association, and Dr. H. J. Rand, president of Rand Development Corporation, were featured speakers at conference luncheon meetings.

"Our industry's accomplishments in advanced appliance design and creative gas utilization will dictate the degree of our future growth," Mr. Davis said. Declaring that future markets will demand "still greater automaticity" in consumer goods, he observed, "We are moving from an age of automaticity to an age of super-automaticity."

As a result, he said, the technical men of the gas industry "must rise to a greater challenge than the salesman, the promoter, the advertising man or any other person on the business scene. Yours is the task of keeping this industry up-to-date. Tomorrow's sales must start in the research and development laboratories today—if they were not started yesterday."

Dr. Rand, who recently toured Soviet scientific facilities, termed Russian progress in gas utilization "unimpressive," adding that in this and many other non-military fields the Soviets "are not as advanced as might be expected."

The president of the Cleveland development firm said, "The Russians talk more about technical developments of the future than about what's being achieved today. Generally speaking, great scientific progress is not evident in Russian everyday living."

Dr. F. E. Vandaveer, research director of The Consolidated Natural Gas System, called for the mandatory factory installation of pressure regulators on all domestic ranges intended for operation on natural gas.

Observing that 92 percent of today's gas customers use natural gas, Dr. Vandaveer said, "For the first time in U. S. gas industry history, one gas—natural gas—is being supplied throughout most of the country. This is comparable to our competitor's supposedly constant energy supply of 110-volt 60-cycle alternating current. An opportunity of a lifetime—an opportunity to capitalize on this situation—now exists."

He told delegates the three types of natural gas now distributed—high inert, high methane and high Btu—are interchangeable, and A. G. A.-approved gas ranges will operate on all three types without orifice or air shutter readjustment.

"To take full advantage of this nearly universal supply of interchangeable natural gases," he said, "pressure regulators should be supplied on each gas range. This is necessary to control the gas pressure to the main burners and pilot burners at all times. Thus, by use of a pressure regulator, a 110-volt natural gas range can be obtained."

G. J. Tankersley, president of Western Kentucky Gas Co. and chairman of A. G. A.'s Gas Heating Task Force, called for greater effort to combat electric heating competition.

"Despite gas heating's advantages, and despite the years of research and development to reach a point where we can provide true quality house heating," he said, "the gas industry is faced with probably its most severe competition for its house heating load.

"Ridiculous as the paradox may seem, this competition is a form of heating that is not only more expensive to operate in most areas but does not come close to providing the seven essential factors necessary for comfort."

To retain its heating load, he said, the gas industry must be ruthlessly aggressive in fighting the competition, and willing to spend money "to tell the honest facts with all its glamour of the advantages of gas heating."

Four members of the A. G. A. Laboratories staff presented papers at the Cleveland sessions. They were Forrest G. Hammaker, chief methods engineer; J. C. Griffiths and E. H. Perry, senior research engineers; and J. W. Gergel,

research engineer.

An April 20 panel discussion, featuring executives of a major utility, appliance manufacturing company, and gas trade publication, stressed the vital need for more effective communications within the gas industry.

Participants included Robert W. Otto, chairman of the board, Laclede Gas Co.; Julius Klein, president, Caloric Appliance Corp.; and Harold W. Springborn, vice president and editorial director, Moore Publishing Co.

Other Research and Utilization Conference speakers included K. B. Nagler, senior vice president, The Peoples Gas Light & Coke Co.; Fred W. Batten, vice president, Columbia Gas System Service Corp.; Dr. F. J. Larsen, vice president, Minneapolis-Honeywell Regulator Co.; and Morton Sterling, chief of the City of Detroit's Bureau of Air Pollution Control.

Also R. F. Schmitt, president, Bob Schmitt Homes, Berea, Ohio; H. T. Gilkey, director of technical services, National Warm Air Heating and Air Conditioning Association; Joseph Grumer, project coordinator, U. S. Bureau of Mines, Pittsburgh; and W. R. Sarno, assistant utilization engineer, American Gas Association, New York City.

Paul W. Kraemer, vice president of Minneapolis Gas Co., served as chairman of the 15th annual conference. The three-day program was sponsored by A. G. A.'s Committee on Domestic Gas Research in conjunction with the Utilization Bureau.

Plastic pipe

(Continued from page 16)

or copper tubing sizes are more common. Both rigid and flexible tubing are used for insert operations; closer tolerances are specified for insert tubing than commercial standards advocate for plastic pipe. These demands have not, to date at least, caused any procurement difficulties.

A major consideration in using plastic pipe in long-time applications such as the distribution of gas is the minimum usable tensile strength. The accompanying table lists the currently accepted values for plastic pipe presently used in gas distribution applications. These stress values reflect the extrapolated failure stress values at some finite time, either 100,000 hours or 50 years. Unfortunately, the agreement on these values for each type of plastic used in pipe is not as good as it should be. For example, one manufacturer of ABS plastics feels that both his Type I and Type II materials are worthy of much higher ratings in respect to effective tensile strength than the industry accepted values. The manufacturers of PVC polymers for pipe appear to be in better agreement on their effective tensile strength values, at least at room temperature.

Data on chemical resistance of the various plastics used for pipe differ widely. As a result, no direct comparisons can be made. Furthermore, none of the available corrosion data are presented for the plastic under stress. This information on the combined effects is believed to be vital for the gas industry.

Dimensions and standards

The plastic pipe industry, through ASTM-SPE Subcommittee D-20, American Standards Association, and the International Standards Organization has been endeavoring for years to provide workable dimensional and performance standards for plastic pipe and fittings. Various commercial standards for PVC, ABS, and polyethylene pipes have been promulgated during the past 10 years. The latest ones are CS-218-59, CS-219-59, and CS-220-59 for ABS plastic pipe, and CS-197 for polyethylene pipe. These are commercial standards and are available from the U.S. Department of Commerce. A revised PVC pipe standard is to be issued shortly.

Joining methods

Plastics can be joined by solvent welding, hot-gas welding, heat-sealing (hot plate or electrically), mechanically, or in perhaps a number of other methods. Most of these methods have been advocated for pipe at one time or another. Currently, the most successful method for thermoplastic pipe other than those made from polyolefins is solvent welding.

Methods of jointing service plastic pipe to itself, to plastic mains and steel mains vary widely. This is a subject that requires a complete study in itself. It is an area where standardization of both design and tolerances are nonexistent. ASTM-SPE D-20 Subcommittee XVII, Sections H and I are working diligently on the specifications for molded fittings. It is with reference to fittings that production tolerances on pipe diameters must be recognized.

A. G. A. future plans

The goal is to clarify and possibly improve the many factors involved in using plastic pipe for gas distribution purposes. Before this can be done to general satisfaction of many companies,

CURRENT PLASTIC PIPE PLASTICS

Plastics	Fiber Stress,[1] psi	Type of Service[2]		Approximate Cost (Net)[3] Dollars/Ft IPS 2-Inch Schedule 40 Pipe
		Service	Pressures	
CAB	1000	A,B,C	D,E,F	0.60
ABS				
Type I	1200	A,B,C	D,E,F	0.69
Type II	1800(?)	A,B,C	D,E,F	—
PVC				
Type I	1200	A,B,C	D,E,F	0.665
Type II	1400	A,B,C	D,E,F	0.665
Polyethylene				
Type III	600	A,B,C	D,E,F	0.32-0.36

[1] Current industry recommended values for service at 73 F, using Barlow's formula 2-inch IPS pipe at 600 psi fiber stress would provide an operating pressure of 77 psi.

[2] Service: A—Inserts (Service replacements)—usually tubing or thin-wall sizes.
B—Direct Burials—services and mains.
C—Mains—Inserts and direct burials.
Pressures: D—Low Pressures (to 15-inch W.C.)
E—Intermediate Pressures (to 25 psig)
F—High Pressures (to 60 psig)

[3] Costs are estimated based on most recently published price lists and discounts.

it will be necessary to establish criteria for selecting suitable pipe and provide means for evaluating candidate pipe materials.

Accordingly, an extensive program has been outlined and agreed upon by the Supervising Committee for Project PG-38. It is recognized that this program may require several years to complete since it involves long-time stress rupture studies (aging) with gas as the fluid while the pipe is exposed to various environments. The continuing program does not include any work to develop new plastic materials as it is realized that the plastic manufacturers are obviously in the best position to conduct any efforts in that direction.

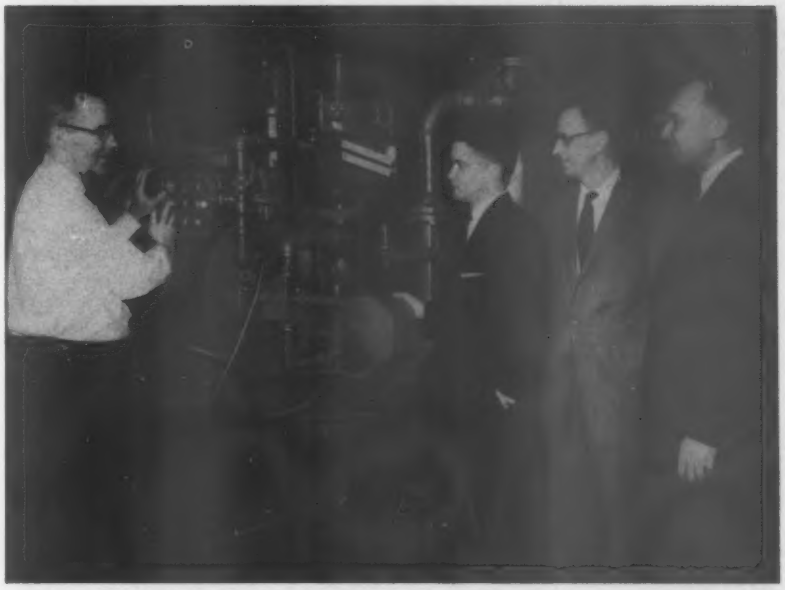
In summary, the purpose of the program is to develop and evaluate test methods that will allow gas utilities and suppliers to determine whether plastic pipe and fittings will perform satisfactorily in gas distribution systems. Methods for measurement of all properties important in this application will be developed. In addition, quality-control test methods will be developed to aid in inspection and approval of plastic pipe after manufacture and prior to installation. A major benefit of this work will be to indicate to suppliers and fabricators the nature and extent of conditions specific to the gas industry and which must be considered in the manufacture and use of plastic pipe and fittings.

The extensive nature of this program makes it worthwhile to examine methods of test that may reflect performance in fabricated form. A practical correlation will have to be established with the long-time test before quality-control tests can be devised.

Major emphasis will be placed on attempting to develop tests which will allow the reasonable prediction of the service life of any plastic pipe. Also, work will be done on the permeability of plastic pipe to natural gas. Since this is an area of considerable concern to distributors of natural gas, the design and evaluation of equipment to determine such properties and their possible effects on the mechanical properties is important.

The current research program is part of the continuing effort by the gas industry to encourage new developments in every field of gas service.

Utility men see gas equipment plants



Brought to C. M. Kemp Manufacturing Co., Baltimore, Md., by a program of tours sponsored by Gas Appliance Manufacturers Association, these gas engineers studied gas equipment production in a recent all-day visit. Gladstone Kier (l.), manager of gas producer division, shows (l. to r.) J. A. Harper, Jr.; R. G. Cornforth; and W. B. Morelock, all of Philadelphia Electric Co., how a gas producer is built

Industrial and commercial

(Continued from page 23)

lowing conclusions in his presentation:

1. A properly designed kitchen ventilating system is essential for air-conditioned food service establishments.

2. The required exhaust fan capacity for hoods over cooking appliances is the same, regardless of whether gas or electricity is used for cooking.

3. The type of fuel or energy used in cooking appliances located in the kitchen has no effect upon the air-conditioning load for the dining area.

4. The heat gain to the kitchen due to gas or electric cooking equipment is the same, providing the appliances are located under a properly designed exhaust hood. For practical purposes, all of this heat gain is due to radiation and, therefore, sensible heat.

5. The heat gain to the kitchen for hooded cooking appliances is estimated at 10 per cent of the rated hourly input for gas equipment and 16 per cent for comparable electric appliances.

6. The "usage factor" to determine the "probable maximum hourly input" to cooking appliances is 0.50. This factor is applied to the manufacturer's hourly input rating.

7. For unhooded cooking appliances, the heat gain to a room is equal to the "probably maximum hourly input." Unless otherwise known, this heat gain may be assumed to be 66 per cent sensible heat and 34 per cent latent heat.

8. Unhooded cooking appliances add tremendously to the cooling load and should never be so installed if there is any possible way of locating them under an exhaust hood.

At the end of his lecture, the presiding officer told the student body that he had heard comments that the new booklet, "Commercial Kitchen Ventilation," was the finest publication that had ever been prepared on the subject.

A surprise feature was introduced in the form of a one-hour sales training film by Republic Steel Corp., entitled "The Care and Handling of Buyers."

The film, high in human interest, showed how a cub salesman learned the fundamentals of selling the hard way. These fundamentals included these pointers:

1. One personal call is worth a dozen phone calls.
2. Don't confine your calls to your friends.
3. Don't short-cut the "No. 2" man.
4. Salesmanship is largely service. Work out new ways of being of service to your customers.
5. Know your customers' operations as thoroughly as possible.
6. Have something interesting to say to every man you call on.
7. Purchasing agents depend on salesmen for their outside information—but it better be right.
8. Listen carefully—mouth shut, ears open.
9. Always try to be helpful. Know the application and installation method for your products.
10. Talk about customers' plans and advance buying. Ask to take inventory.
11. Don't bluff! Say you don't know, but will find out.
12. Make friends with buyers, know their problems.
13. Sell your company, its policies, its facilities—in terms that benefit your customers.
14. Avoid high-pressure selling. Don't be weak, but avoid overpowering the customer.
15. Find out the best day to call, the best time of day.
16. At the right time, ask to see engineering or other departments.
17. Call often, but don't stay too long.
18. Don't lose interest the minute the order is placed. Follow through to delivery . . . and to the next order.

Organized tours were among the highlights of the school.

Buses first took the students from the Hotel to the Institute of Gas Technology. Arriving at the IGT, they assembled in a large classroom where Dr. Rex Ellington, assistant research director, told them in considerable detail the purposes and activities of IGT. This was followed by a tour of the institute where the several research projects being worked on could be examined by the students and questions answered by the technicians on duty.

The students were then transported to the Navy Pier where the 41st annual Restaurant Exposition was in progress. The students were guided to the A. G. A. Combined Commercial Gas Exhibit where they saw the equipment on display by the cooperating exhibitors of this area. Each student was also given a list of gas equipment manufacturers exhibiting outside of the A. G. A. area to visit as they walked their way up and down the four miles of aisles on Navy Pier.

The complete reference text of the 1960 A. G. A. Commercial Gas School is available from: Order Department, American Gas Association, 420 Lexington Ave., New York 17, N. Y. Price to members $5.00.

Once again the A. G. A. Combined Commercial Gas Exhibit spanned Navy Pier, Chicago, at the "quarter mile post" where every visitor to the show during the week of May 9 had to pass under the Blue Flame Banner to see the exhibits.

A feature was the greatly enlarged A. G. A. Lounge in the center of the exhibit area which afforded not only easy access from one aisle to the other, but a broad vista of the entire gas exhibit.

Participating in the exhibit were:

Anetsberger Brothers, Inc.
Cleveland Range Co.
Comstock-Castle Stove Co.
Duke Manufacturing Co.
Joseph Goder Incinerators
B. H. Hubbert & Son, Inc.
Kewanee Industrial Washer Corp.
Martin Oven Co., Inc.
Mid-Continent Metal Products Co.
Morley Manufacturing Co.
Peerless Stove & Mfg. Co.
Robertshaw Thermostat Division, Robertshaw-Fulton Controls Co.
South Bend Range Corp.
Suburban Appliance Co.

A perennial highlight of Restaurant Show Week is the awards presentation by *Institutions* Magazine to the winners of their Food Service Contest. This year there were 59 winners in the three classifications of awards. The gas industry fared well this year in having a total of 45 winners, 76 per cent of the total. For the first time, all four of the First Awards were won by contestants using gas equipment. One of these First Award winners was the new Air Force Academy, Colorado Springs.

Of the 22 Merit Awards, 18, or 82 per cent had gas equipment and there were 23 gas installations out of 33 Honor Awards.

At the Restaurant Show, the National Restaurant Association presented a plaque to A. G. A. for its activities in research advancing the restaurant industry. The plaque was received by Robert Ingeman, The Peoples Gas Light & Coke Company.

Accounting

(Continued from page 21)

abilities and, perhaps, home studies, some might be superior to those with university or college degrees. But, unhappily, they will not get a real chance."

Mr. Leary said that in his opinion, management did not do enough to encourage employees to pursue education.

"I believe any individual with potentiality should be pushed," he said, "to obtain sufficient educational background, and insure promotability. The combination of experience and education should create an efficient organization in which the quality of leadership is inherent in the majority of the management personnel.

" . . . Going back thirty-five or forty years, a high school education was comparable to a college education of today, as an asset to the job seeker," Mr. Leary pointed out, illustrating with a number of cases in point from current job qualification requirements.

This being the case, Mr. Leary said, "individuals are willing and anxious to get an education, even if it means attending school, after work, two or three nights a week for a period of years."

The demand for education is general, Mr. Leary said, but applies particularly in the fields of accounting, finance and taxes, which have been growing increasingly complex.

"In closing," Mr. Leary said, "I should like to make this observation—that the more I see of business today, the more I believe the only way for the non-college employee to advance to middle and top management is to marry the boss's daughter."

In "What Does the Customer Really Want to Know?" Donald T. Faust, West Penn Power Company, said:

"What the customer seemingly wants to know from us may not necessarily be what he *actually* wants to know."

The kinds of information which customers want or which companies want

customers to have were enumerated as 1) "nuts and bolts" information; 2) "anti-complaint" information; 3) "pull our chestnuts out of the fire information" about government ownership, franchises, legislation and the like; and 4) "weathermaking" information, designed to create a good "climate for business."

"These various kinds of customer information are in our programs," Mr. Faust said, "because we think them important from the company standpoint. We look at these matters primarily through our own eyes, not the customer's, and not immaturely, because without a strong element of self-interest we'd go broke, to no one's joy but the government ownership zealot's.

"However, we do not often enough put ourselves in the customer's place, and seek out what we should tell him in his interest."

What the customer really wants to know, Mr. Faust said, is difficult to determine because neither the company nor the customer has really thought about it.

"Not unexpectedly," Mr. Faust pointed out, "numbers of people mention that the customer wants assurance from us, in several basic areas. One, that he is dealing with a capably managed and reliable company; another, that he is receiving the 'best possible service at the most reasonable rates.' Another writer broadens the scope and says, 'It may not be so much a matter of what customers want to know from us as it is a question of whether we are prepared to serve them with reliable and economical service, to handle their requests in a workmanlike way, and their inquiries in a businesslike and friendly manner.'

"We agree heartily: What we do is definitely more important than what we say."

After discussing specifics of customer information contacts, Mr. Faust summed up with 10 points that customers want to know:

1. Simple, helpful facts about his service.
2. Company services available to him.
3. A few essentials of how to do business with us.
4. That company and employees want to serve him well and cheerfully.
5. That he can get prompt help on problems and adequate answers to questions.
6. That he's getting good service.
7. That the rates are reasonable.
8. That he isn't being overcharged—is "not alone in the boat."
9. That he is looked upon and treated as an individual.
10. What's new and practical in utility uses, so he can live the most modern way.

In addition, Mr. Faust gave a five-point list of things we want the customer to know:

1. What we do as companies and through our employees to be good citizens wherever we serve.
2. Facts regarding our current problems that affect customers, such as a request for franchise renewal, need for a rate increase, proposed legislation.
3. What our area has to offer to industry and what we are doing about it.
4. The free enterprise story in general.
5. The bad effects of government power, in particular.

He concluded with an eight-point list of do's and don'ts:

1. We need more empathy in developing customer information programs.
2. Surveys should consider not only complaints, but questions and comments as well. Information programs are for happy customers, too.
3. The basis for good customer relations is good customer service in the broadest sense. Actions speak louder than words.
4. Conscious effort should be made to create substitutes for our decreased customer contacts.
5. Consider using service analysis forms as a tool for more effective handling of high bill complaints.
6. When we want customer help in pulling our chestnuts out of the fire, we should emphasize his interest.
7. Be sure specific customer information projects will do more good than harm.
8. Let's not wear undeserved halos—they don't sit well and are not becoming.

Featured speakers from outside the gas and electric industries included James K. Polk, partner, Whitman, Ransom and Coulson; Clifford H. Domke, partner, McKone Badgley, Domke & Kline; James L. Hayes, Dean of the School of Business Administration, Duquesne University; Maurice R. Scharff, consultant; Edward M. Imhoff, Pioneer Service and Engineering Company.

Sessions were conducted jointly by A. G. A. and E.E.I. coordinators and chairmen, as follows:

General Activities, Albert J. Klemmer, A. G. A., and George A. Brownmiller, E.E.I.

Customer Activities, Edward K. Schneider, A. G. A., and Dudley M. Arnold, E.E.I.

Depreciation Accounting, H. Frank Carey, A. G. A., and Charles D. Davis, E.E.I.

Customer Accounting, Leo Murlowski, A. G. A., and Richard G. Maas, E.E.I.

Customer Collections, Rodney W. Reamy, A. G. A., and Melvin G. Wuest, E.E.I.

Customer Relations, Clyde Schrotberger, A. G. A., and John B. White, Jr., E.E.I.

Accounting Employee Relations, Walter E. Grinter.

Internal Auditing, James W. Schoonmaker, A. G. A., and Richard W. Briggs, E.E.I.

General Accounting, James A. Ashe, A. G. A., and Miles J. Doan, E.E.I.

Plant Accounting and Property Records, Harold R. Porter, A. G. A., and Paul D. Johnson, E.E.I.

The conference was jointly sponsored by the A. G. A. Accounting Section, Charles H. Mann, chairman, and the E.E.I. Accounting Division, Parker R. Lawson, chairman.

Parade of homes

(Continued from page 19)

also carefully trained to explain features of the gas equipment.

Authentic gas street lights, installed by developers of Walnut Bend before the home show was planned, lent emphasis to the use of gas equipment.

Soon after Parade construction was under way early in the year, United Gas, on whose lines the Parade homes were located, moved a temporary building to the Parade site and identified it as "Blue Flame Headquarters." A full-time gas equipment specialist was assigned to the office to advise builders on proper installation and venting of

gas built-ins, location of outlets for refrigerators and dryers and installation of gas lights. The specialist also supervised the 16 gas air conditioning installations.

Free coffee, telephones and other helps were available to builders while the Parade homes were under construction.

The Home Show was housed in a red-and-white striped 60 by 350-foot tent. The gas equipment exhibit was the largest in the show and dominated the exhibit tent. The Parade's showcase block was fenced off, so that all visitors entering and leaving the grounds were funneled through the Home Show.

More than 175,000 visitors in all attended the combination Parade of Homes and Home Show during its 15-day run.

Spokesmen for the Houston Natural Gas and United Gas termed the event the most effective gas tie-in promotion ever conducted in Houston.

School heating

(Continued from page 13)

deck, finished by spray painting, forms the classroom ceilings. The windows are single glazed with steel sash.

The insulation differences in the two buildings are shown in Table 1.

As a result of this added insulation and the different character of the floor construction, the design heat losses are radically different, the heat loss of the electric school is reduced to 76.7% of that of the gas school. These hourly design heat losses are summarized in Table 2.

The use schedules are shown on a weekly basis in Table 3.

The weekly use schedules and design heat loss data can be used to calculate the heat loss for an average week. When doing this, we should not fail to credit both schools with heat gains from occupants and lighting which amount to 404,000 Btu/hr when the schools are occupied. The detailed calculations are shown in Table 4.

The heat lost by the Highland school (gas) is more than twice that lost by the W. T. Hoag school (electric) because of the differences in construction and building use.

In actual numbers, the ratio of the weekly heat lost, gas to electric is:

$$\frac{89{,}544{,}000}{42{,}945{,}000} = 2.09$$

Before applying this important factor, another term, energy ratio should be explained.

Energy ratio (ER) has been defined, in previous comparative studies, as the ratio of gas Btu to electrical Btu required *to do the same work*. The energy used for heating in the two schools was available from separate meters. The ratio of Btu at the meters furnishes an apparent energy ratio.

Taking the gas and electric input quantities from the report itself, we find:

$$\text{Apparent ER} = \frac{\text{gas input}}{\text{electric input}}$$

$$= \frac{3731 \text{ Million Btu}}{1245 \text{ Million Btu}} = 3.00$$

But the definition of ER requires that the work done by gas and electricity *be the same*. In the case of the Angola schools, the work done is *not* the same; we already found the ratio of the weekly heat lost to be 2.09. The heat lost can be thought of as the work done. Thus, the actual ER is simply the apparent ER divided by the ratio of work done (weekly heat lost).

$$\text{Actual ER} = \frac{\text{Apparent ER}}{\text{Ratio of Work Done}}$$

$$= \frac{3.00}{2.09} = 1.44$$

The ER has been established so that the results of the Angola study can readily be applied to any other school heating problem in which a hot water boiler (gas) is being compared with electric heating. It is a definite yardstick for finding how much electricity is needed to do the same heating job as a given amount of gas.

When the gas and electric rates are known, an estimate of the heating cost ratio can be quickly prepared.

The rates at the Angola schools, during the period of the study, were, in effect:

Electricity: 1.66¢/kwh; 3413 Btu/Kwh, unit energy cost = $4.86/Million btu.

Natural gas: 74.6¢/Mcf; 1030 Btu/cu.ft., unit energy cost = $0.724/Million btu.

The ratio of the unit energy costs ($4.86/$0.724 = 6.72) means that each

TABLE 1

W. T. Hoag (Electric)		Highland (Gas)
1½" styrofoam insulation	Walls	None
2¼" Fiberglass insulation	Roof	None
2" styrofoam insulation	Perimeter	1" Fiberglass

TABLE 2

	W. T. Hoag (electric)	Highland (gas)
Transmission heat loss of building	682,461 Btu/hr.	1,110,427
Infiltration heat loss	171,485	175,295
Ventilation heat loss*	572,310	572,310
	1,426,256 Btu/hr.	1,858,032 Btu/hr.

* This ventilation heat loss is calculated on the basis of 5.64 cfm of outside air per pupil at −5°F design temperature.

TABLE 3

	W. T. Hoag (electric)	Highland (gas)
Heating to 70°F	6:00 A.M. to 3:30 P.M. (each weekday)	6:00 A.M. to 3:30 P.M. (each weekday) 6:00 A.M. to Noon (Saturday)
Ventilation	9:00 A.M. to 3:30 P.M. (each weekday)	9:00 A.M. to 3:30 P.M. (each weekday)
Heating to 70°F for Basketball	Not done	7:00 P.M. to 10:00 P.M. (Wednesday)
PTA Meeting	1 hour/week*	1 hour/week*

* Each school has one PTA session each month which has been apportioned on a weekly basis as shown.

Btu delivered by electricity costs 6.72 times as much as each gas Btu. This basic energy cost ratio must be reduced by 10% to allow for electrical auxiliaries on the gas forced water heating system. This reduces the energy cost ratio to an effective value of 6.11.

We can obtain a comparison of the heating costs with gas and with electricity by combining the ER and the ratio of unit energy costs as follows:

$$\text{Heating cost ratio} = \frac{\text{ratio of unit energy costs}}{\text{energy ratio}} = \frac{6.11}{1.44} = 4.24$$

The significance of this value (4.24) lies in the fact that if the schools in Angola were, in fact, thermally equal, and subject to equal use schedules, the cost of heating the electric school would be *4.24 times as much as the cost of heating the gas school.*

Inasmuch as the total heating cost (including auxiliaries) of the gas school actually was $3,008.40, the electric heating bill would have been $12,755.62. The use of insulation, the lower night and week-end temperatures, and the fewer hours of use combined to reduce the actual heating bill at the electric school to $6,140.00. This is still more than double the heating cost at the gas school, while doing less than half the heating job. Economic analyses of this type are required to reveal all the pertinent facts in comparative studies.

An interesting sidelight of the Angola Schools study is the degree of correspondence with the Shingle Creek school test in Minneapolis. This test compared small clusters of classrooms which *were thermally equal* and were subject to the *same use schedule.* The results of this test (published in the *Minnesota Engineer,* December 1959, and available in reprint form from A. G. A.), showed an energy ratio of 1.55. Considering the more limited nature of the Shingle Creek study, this ER = 1.55 very favorably compares with the ER = 1.44 at Angola.

Further, if the rates (electric: 2-3/8¢/kwh; gas: 50.1¢/Mcf) which at Shingle Creek produced a heating cost ratio of 7.54 (including auxiliaries) were applied to Angola's schools, we would expect the heating cost ratio to be 8.11. These figures emphatically contradict claims of operating cost economies on the part of the competition.

Another question which this study tried to answer was: How does the actual consumption of fuel compare to the estimated quantities? In other words, how good are our estimating methods?

The method of analyzing this is straightforward:

(1) The boiler efficiency is taken at 80%; the efficiency of the hot water distribution system is generally taken at 85% in boilers of the size used at Angola. The combined efficiency from meter to unit ventilator is thus: .80 x .85 = .68 = 68%.

(2) The efficiency of the electric heating system is assumed to be 100%. This is not absolutely correct, but the error so introduced is small.

(3) The weekly heat requirements were previously shown to be: Electric school: 42,945,000 Btu; Gas School: 89,544,000 Btu.

(4) The anticipated ratio of Btu consumption, measured at the meter is thus:

$$\text{Btu ratio at the meter} = \frac{\text{gas school heat reqt./gas system eff.}}{\text{electric heat reqt./electric system eff.}} = \frac{89{,}544{,}000/.68}{42{,}945{,}000/1.0} = 3.07$$

The actual ratio of Btu at the meter has been shown to be 3.00.

The result is amazingly true to form, showing that the estimating procedures used are quite accurate; this is after all, the value of an estimate.

Following closely on the heels of claims of operating economies are claims of initial cost savings. The Angola schools report furnishes factual information on this subject which can be helpful in combatting incorrect claims.

At Angola, much was made of the difference in first cost of the two schools. The report shows that the total initial costs of the buildings and grounds are:

W. T. Hoag (electric) . . $611,102.24
Highland (gas) $656,036.66

At first glance, the first cost difference of $44,934.42 in favor of the electric school is an insurmountable handicap for gas. However, the report very clearly and precisely points out the facts of the matter. For convenience to the reader, the heating system cost tabulation shown in the report is repeated here in Table 5.

Two entries in Table 5 require some explanation:

(1) The estimated cost of the stack, $3,500.00, is felt to be quite conservative for a stack having a 20-inch diameter and 25-foot height.

(2) The item labelled "ventilation" covers the cost of the exhaust fans in the corridors of the W. T. Hoag school. These units were installed and paid for as part of the heating system contract at Highland, and no separate entry is made for them in the Highland column. Actually both schools have the same exhaust facilities.

The tabulation combines the costs of the heating and electrical systems because the single contract for both systems at the W. T. Hoag school makes it impossible to correctly separate these costs. We can, however, analyze the problem in a somewhat different manner.

The non-heating components of the electrical systems are identical in both schools, e.g. the lighting and the miscellaneous electrical devices. We can, therefore, eliminate them as a source of the cost difference. The only remaining items of cost are the heating and ventilating systems, and the insulation. Since the requirements of electric heating demanded heavy insulation, it is only proper to charge the cost of the insulation to the electric heating system as an integral part of the electric heating system. Thus, the entire excess ($6,501.04) in the first cost of the W. T. Hoag School's heating and electric systems is traced directly to the heating system alone. The lower cost of the gas heating system upholds the generally accepted views on the matter.

The cost ($18,440) of the added insulation was a substantial portion of the higher cost of the electric heating system. It is true, if we consider only the electric school for the moment, that the insulation will pay for itself rather quickly, in little more than three years. *But the added insulation failed to make electric heating competitive with gas.* This is an important point, all

TABLE 4

W. T. Hoag (electric)

Weekly hours heating to 70°F = 5 days × 9.5 hrs. per day + 1 hr = 47.5 + 1 = 48.5 hours
Weekly hours ventilation = 5 days × 6.5 hrs per day + 1 = 32.5 + 1 = 33.5 hours
Weekly hours set back to 50°F = (7 × 24) − 48.5 = 168 − 48.5 = 168 − 48.5 = 119.5 hours

(1) heating hours × (transmission + infiltration losses) $\times \frac{70°F - 34.8°F}{70°F - (-5)°F}$

(2) ventilating hours × ventilation heat loss* $\times \frac{10 \text{ cfm}}{5.64 \text{ cfm}} \times \frac{70 - 34.8}{70 - (-5)}$

(3) non-heating hours × (transmission + infiltration losses) $\times \frac{50 - 34.8}{70 - (-5)}$

The above relationships in numbers are:

(1) $48.5 \times 854{,}946 \times \frac{35.2}{75}$ = 19,440,000 Btu/week

(2) $33.5 \times 572{,}310 \times \frac{10}{5.64} \times \frac{35.2}{75}$ = 15,954,000

(3) $119.5 \times 853{,}946 \times \frac{15.2}{75}$ = 20,681,000

56,075,000 Btu/week

less heat gain: 5 × 6.5 × 404,000 = 13,130,000

Net weekly heat loss = 42, 945,000 Btu/week

Highland (gas)

Weekly hours heating to 70°F = 5 × 9.5 + 6 + 3 + 1 = 47.5 + 10 = 57.5 hours
Weekly hours ventilation = 5 × 6.5 + 6 + 3 + 1 = 32.5 + 10 = 42.5 hours
Weekly hours set-back to 60°F = (7 × 24) − 57.5 = 168 − 57.5 = 110.5 hours

(4) heating hours × (transmission + infiltration losses) $\times \frac{70 - 34.8}{70 - (-5)}$

(5) ventilating hours × ventilation heat loss* $\times \frac{10}{5.64} \times \frac{70 - 34.8}{70 - (-5)}$

(6) non-heating hours × (transmission + infiltration losses) $\times \frac{60 - 34.8}{70 - (-5)}$

The above relationships in numbers are:

(4) $57.5 \times 1{,}285{,}722 \times \frac{35.2}{75}$ = 34, 697,000 Btu/week

(5) $42.5 \times 572{,}310 \times \frac{10}{5.64} \times \frac{35.2}{75}$ = 20, 241,000

(6) $110.5 \times 1{,}285{,}722 \times \frac{25.2}{75}$ = 47,736,000

102,674,000 Btu/week

less heat gain: 5× 6.5 × 404,000 = −13,130,000

Net weekly heat loss = 89,544,000 Btu/week

* The ventilation heat loss (572,310 Btu/hr) was calculated under the ventilation rates required by the school regulations of New York State. These call for 5.64 cfm outside air per pupil when the outdoor temperature is −5°F. This rate is increased to 10 cfm when the outdoor temperature is 35°F or higher. Because the average daily Winter temperature at Angola is 34.8°F, the weekly Btu required by the ventilation air is corrected as shown.

TABLE 5

	W. T. Hoag (electric)	Highland (gas)
Heating	—	$ 64,768.00
Electric (* including heating)	$119,205.04*	70,522.00
Ventilation	7,646.00	—
Insulation to modify system	18,440.00	—
	$145,291.04	$135,290.00
Estimated cost of stack for gas boiler	—	3,500.00
TOTAL COST: Heating & Electric Systems	$145,291.04	$138,790.00
	138,790.00	
Initial cost difference of heating and electric systems, combined	$ 6,501.04	

too frequently overlooked.

Without regard for the breakdown of the individual contract sums, we are still faced with the difference in the initial costs of the two schools. Is there any explanation? Yes—differences in site preparation costs, differences in construction costs between slab-on-ground and crawl space construction, differences in plumbing costs, the need for different amounts of weather proofing, and many others, all of which have been carefully tabulated. They are too lengthy to be repeated in full, but some of the outstanding items are reproduced in order to show that they are not related to the choice of the heating system.

(1) The Highland school was charged $18,800 for tree clearance. The W. T. Hoag school was charged $3,750 for tree clearance.

(2) The Highland school was charged $14,164 to relocate a septic tank.

(3) The costs of plumbing at W. T. Hoag were $11,600 higher than those at Highland because of slab-on-ground construction.

(4) The cost of general construction at Highland was some $47,075 higher than at W. T. Hoag because of the crawl space.

Based on this examination of the Angola schools, there seems to be no basis in fact for claims that large savings in initial cost are inherent in electric heating systems. An accurate, detailed analysis of the facts is required in every case.

The over-all effect of the Angola schools report is to demonstrate that the heretofore acknowledged, superior features of gas apply to schools.

The gas heating system cost less, in place, than the electric heating system.

The cost of heating the gas school was less than half the cost of heating the electric school, while doing twice the total heating job.

The study of these "identical" schools was undertaken by the University of Buffalo in a spirit of public servivce. It was conducted without bias or under the influence of preconceived ideas. It was directed by Professor Paul E. Mohn of the mechanical engineering department. The report itself is a scholarly presentation of the facts revealed by the study.

It is available for study at A. G. A. and the offices of the members of the Committee on Comparison of Competitive Services.

The information developed by the study will be useful to prevent incorrect or inaccurate claims from finding their way into future discussions on the merits of gas and electricity for heating schools. For schools are not only important in themselves, they are a signpost of the future. Today's school is more than just a school—it is a symbol of community identity, representing, to many minds, all that is best and modern. We offer the report and this amplification as a service to assist in securing what is best and modern from all points of view.

(Copies at the Angola Schools summary report, "Gas and Electric Heating in Two Schools at Angola, New York: School Year, 1958-1959," are available in two versions: a light stock mailer, code number 25a/u @ 15¢ per copy; a heavy stock piece for formal presentation, code number 25b/u @ 25¢ per copy.)

Convention

(Continued from page 4)

The Sunray Stove Company, Delaware, Ohio
The Tappan Company, Mansfield, Ohio
Tennessee Stove Works, Chattanooga, Tenn.
Wedgewood-Holly Corporation, Culver City, Calif.
Whirlpool Corporation, St. Joseph, Mich.
Calcinator Corp., Bay City, Mich.
Caloric Appliance Corp., Jenkintown, Pa.
Joseph Goder Incinerators, Chicago, Ill.
Locke Stove Co., Kansas City, Mo.
The Majestic Co. Inc., Huntington, Ind.
Martin Stamping & Stove Co., Huntsville, Ala.

2. Manufacturers of Significant *Outdoor* Applications:

California Gas-Lighting, Inc., Santa Fe Springs, Calif.
Chicago Combustion Company, Cliffside Park, N. J.
Dixie Products, Inc., Cleveland, Tenn.
The Majestic Co. Inc., Huntington, Ind.

3. *Gas* Companies Whose Developments Have Qualified for the Exhibit:

Elizabethtown Consolidated Gas Co., Elizabeth, N. J.
Lone Star Gas Co., Dallas, Texas
Northern Illinois Gas Co., Aurora, Ill.
Oklahoma Natural Gas Co., Tulsa, Okla.
United Gas Corporation, Shreveport, La.
Washington Gas Light Co., Washington, D. C.

Operating

(Continued from page 27)

tains and snow. It operates as well in desert heat as in sub-zero temperatures and can fly in practically any weather. It is practically as much a part of offshore operations as the rig itself. Four hours by boat is the approximate equivalent of twenty minutes by helicopter. The use of the helicopter results in savings of time and productive man hours as well as a reduction in expensive shutdown time due to needed men and/or parts. . . .

"As we gain experience with the helicopter, we are finding that the limit of its use appears to depend only on constructive imagination. It seems that there is always one more job that you can do with it."

Helicopters for most jobs are more practical than planes, Mr. Eckel stated, since too high a rate of speed often is not desirable. Ability to hover also is often important.

Mr. Eckel reported four accidents in four years with helicopters used by his company. In three of these no one was injured, and in the fourth injuries were slight.

In sum, Mr. Eckel's presentation constituted a strong endorsement for helicopters as a gas industry working tool.

A panel on "Compact Cars," moderated by W. B. Streitle, Rochester Gas and Electric Corporation, compared experiences of several companies with the new smaller cars as fleet vehicles. Economies in first cost and in operation were measured against convenience, servicing requirements and other factors. The panel was unable to reach agreement on the merits of the cars, and the final consensus was that only after they had been in operation for the normal life of such equipment could the performance and possible advantages of compact cars be accurately assessed.

Complete printed proceedings of the Operating Section's Distribution, Transmission and Production Conferences will be available about August 15, at $15 per copy. Orders should be addressed to Order and Billing Department, A. G. A.

A.G.A. staff members learn "persuasionship"

Paul Mills, an expert in developing effective use of voice, coaches "speaking" members of the A. G. A. staff in his program, "Key Man Training in Persuasive Voice Personality." In front row are Ann Eberst and William J. Antonachio. In back row (l. to r.) are Vaughan T. O'Brien, Theodore I. Gradin, J. Stanford Setchell, Edgar A. Jahn, James M. Beall, Jac A. Cushman, Mr. Mills, and Henry E. Littlehales

Industrial relations round table

Prepared by
A. G. A. Personnel Committee

Edited by W. T. Simmons

Assistant Personnel Manager
Philadelphia Electric Co.

● **10 rules for happier human relations**—In the issue for January, 1960, of *Personnel Journal,* H. T. Rosenberger suggested improvements in our effectiveness in dealing with employees. He offered these ten guideposts: (1) Try to like people and to take an interest in them without delving into their personal affairs, (2) Remember people's names and make a point of calling them by their names, (3) Be approachable, but don't try to be a psychiatrist, (4) Suggest, ask questions, give instructions rather than curt or routine orders, (5) Avoid arguments, (6) Be objective without being blunt, (7) Win cooperation without compelling it, using persuasion rather than authority, (8) Explain the reason why, which may take time but is worth it, (9) Commend when commendation is due, and make people feel important until they prove they are not, (10) Set reasonable standards, and make it clear that they must be met.

In general, Mr. Rosenberger said that if you want to be effective in your relations with others, learn to understand and appreciate people, not merely to get along with them.

● **Retirement suggestion from a famous senior world citizen**—Deems Taylor comments on the challenges and problems of retirement: "Be curious. Maintain an attitude of 'I wonder what's going to happen tomorrow' toward life. Have a horror of doing nothing at all, and . . . oh, yes. Keep your figure."

● **Training tomorrow's leaders today**—Russell H. Ewing stated in a recent issue of *Trained Men* that changing world conditions create new demands for leadership skills. He pointed out that as the task of management at every level becomes more complex—in government, in business, in science—it becomes more obvious that our very existence may depend upon our ability to train people in the managerial arts of planning, organizing, staffing, directing, controlling, and operating an enterprise.

However, a delusion to be overcome is the assumption that although a lawyer must study law and a chemist study chemistry, a leader need not study leadership nor a manager management. It is now clear, according to Mr. Ewing, that leadership is a learnable behavior that can be taught as effectively as any subject. We desperately need new programs to teach leadership. We cannot train future leaders with obsolete materials and methods. The new training will require the best research that can be done, the best students and instructors available, the best training aids and equipment the nation can afford.

● **Unions thrown off ivory tower**—Once upon a time, labor was the fairhaired boy of the intellectual. But since World War II, unions have suffered heavy losses in their egghead support; so has liberalism as a philosophy.

Dr. George Odiorne, University of Michigan, at an industrial relations conference in Grand Rapids, Mich., claimed that unions may come under increasing attack from educators in 1960. He said that nowadays a professor is more easily aroused by the plight of the man in the gray flannel suit than that of the horny-handed son of toil. The reason is that the worker lives in a better house and drives a fancier car than does the professor.

Management also has come in for some recent comment. At a session of Xavier Institute of Industrial Relations, Secretary of Labor James P. Mitchell pointed out the growing responsibility shared by labor and management. He stressed that both must subordinate personal self-gain for the good of total society. He offered these guides for labor-management relations: (1) that no single interest has the right to endanger the general interest, (2) that no institution or combination of institutions can derive its own welfare from a loss to society, (3) that any private institution, corporation, or union that involves the public welfare has a public responsibility.

● **Court Decisions**—Court enjoins handbilling without answering whether it is picketing—In issuing an injunction against District 76 of the Retail, Wholesale and Department Store Union for its picketing and distribution of handbills at Morgan Shoe Stores, Philadelphia, Pa., the Federal District Court for Eastern Pennsylvania did not attempt to decide whether the handbilling amounted to picketing within the Taft Act's Section 8(b)(7)(B).

The union raised the question of whether distribution of circulars in front of the stores in an attempt to organize employees, as separated from picketing with placards with the same object, would constitute picketing.

Section 8(b)(7)(B), one of the 1959 Reporting and Disclosure Act's amendments of the Taft Act, bars recognition or organizational picketing of a firm where an employee representation election has been conducted within the preceding 12 months. However, the term "to picket" is not defined.

In a ruling by Judge Wood, the court said the Taft Act's Section 10(1) mandatory injunction provisions require only that the court must "determine the reasonableness of the belief of the (National Labor Relations Board) regional attorney that an unfair labor practice has been and is being committed."

Judge Wood said that "the regional attorney's position is that 8(b)(7)(B) expresses the judgment of Congress that within 12 months after a valid election has been conducted among an employer's employees, no organizational picketing, no matter how carried on, shall be permitted."

Judge Wood then said in the conclusion of his decision to issue the injunction that,

> "The section in question makes no distinction between picketing carried on in a peaceful way, which publicizes the true facts of a labor dispute, and picketing carried on with violence, threats, libellous statements, etc.
>
> "In other words, even the best kind of picketing, that is, picketing of the type which would ordinarily be protected by the constitutional guarantee of freedom of speech, is prohibited for the duration of the 12 months following a valid election. For these reasons the regional attorney believes that the section also prohibits the distribution of leaflets where an object thereof is requiring an employer to recognize a union or requiring the employees to select that union as their bargaining agent. We think this is a reasonable interpretation of Section 8(b)(7)(B) of the act.
>
> "Therefore, until the board renders its decision on this question, we shall enjoin the distribution of the leaflets which the respondent union has distributed in front of the Morgan Shoe Stores."

(NLRB versus District 76, Retail, Wholesale and Department Store Union, AFL-CIO Civil No. 27913. April 14, 1960. USDC EDst Pa.).

● **NLRB Rulings**—Legal language is here to stay—lawyers, too. Lawyers suspect they are not welcomed to the bargaining table by many unions. Whether or not their suspicions are justified, there is a place for them at the bargaining table, and a union cannot keep them away.

One Teamsters' local, for example, recently refused to bargain with the K-C Refrigeration Transport Company, of Albany, N. Y., unless it turned out its attorney. K-C was willing to negotiate with the local, but only through its attorney. The union insisted that it would do business with the attorney only if K-C first met with the union, without the attorney, to look over its proposed contract. The company stood its ground; so did the union.

NLRB found that by such insistence the union had committed an unfair labor practice.

Industry news

Mrs. America finals under way in Florida

THE WAR MEMORIAL Auditorium in Fort Lauderdale, Fla., becomes the largest gas kitchen in the country, June 2 through June 14, 1960, as RCA Whirlpool gas ranges, refrigerators, and automatic washer-dryers are installed in 17 model all-gas kitchens for the World Series of homemaking—the 22nd annual "Mrs. America" Contest National Finals.

The coveted Mrs. America crown, which carries with it a $30,000 all-gas home, will go to the woman who is judged best all-around housewife. She must prove in various tests that she can cook, bake, wash clothes, prepare a refrigerator dessert, as well as design a floor covering and bathroom for family use and style her own hair.

Individual trophies will be awarded to the winning contestant in each of these events: the RCA Whirlpool Gas Range Cake Baking Event, the RCA Whirlpool Laundry Event, the RCA Whirlpool Gas Refrigerator Dessert Event, the RCA Whirlpool Gas Range Casserole Event, the Johns-Manville Home Building and Styling Event, the Culligan Soft Water Event, the Toni Hair-styling Event, and the Crane Company Event.

The panel of judges includes three newspaper food editors—Dorothy Sinz, of the *Dallas Times-Herald;* Grace Hartley, of the *Atlanta Journal;* and Alma Lach, of the *Chicago Sun-Times.* They will join Elaine Knowles Weaver, professor, College of Home Economics at Ohio State University and a specialist in kitchen appliances, in judging the homemaking events.

Rounding out the panel in the area of poise and personality are King Features' columnist Alice Hughes; Louise Morgan, who headlines a woman's program on the Yankee Network; and Eddie Senz, former make-up artist for 20th Century-Fox and Paramount Pictures.

The final hour of competition for the title will be broadcast from Fort Lauderdale June 10, 1960, as a CBS news special event on the CBS Television Network (11:15 p.m. to 12:15 a.m. Eastern Daylight Time).

Julia Meade, of "Playhouse 90," will be featured in the Mrs. America Pageant telecast. Well-known radio and TV announcer, Bob Trout, will also be seen.

TV celebrity Bud Collyer, star of "To Tell the Truth" and "Beat the Clock," will be master of ceremonies. No stranger to the Mrs. America contest, Mr. Collyer was featured in last year's televised pageant.

Mrs. America of 1961 will have a busy year ahead, appearing at promotions of RCA Whirlpool dealers and distributors, at department stores, gas utility companies, and other locations on behalf of RCA Whirlpool gas appliance kitchens. She will officiate at home openings for Johns-Manville Seven-Star Mrs. America Home Builders. Mrs. America of 1961 will serve as a good will ambassadress for the entire gas industry.

Short course scheduled

THE 20th annual Appalachian Gas Measurement Short Course will be held at West Virginia University, Morgantown, W. Va., August 29 through 31, 1960. The course is annually attended by measurement and control engineers and other technical personnel in the gas and petrochemical industries.

Southern Gas Association elects officers, honors Zachry, Flanagan

THE SOUTHERN Gas Association's 52nd annual convention, held in April, 1960, closed at Galveston, Texas, with the election of James A. Wilson as president.

Mr. Wilson is a vice president of the Texas distribution division of United Gas Corp., Houston, Texas.

The program of the convention was headed by Mayor H. Roe Bartle, of Kansas City, Mo., whose address drew a standing ovation.

An expansion in SGA's staff was announced by O. W. Clark, retiring president of SGA, with the appointment of Roger H. Reid as assistant managing director. Mr. Reid has been director of public relations for the United States Junior Chamber of Commerce. He will have headquarters in SGA's Dallas offices with Managing Director R. R. Suttle, who is beginning his 15th year of service with the association.

Another speaker was Norman N. Royall, Jr., professor of mathematics and physical science at the University of Kansas City, Mo., who discussed "The Shadow of the Next Industrial Revolution."

Dr. Royall stated that victory over paper work is at hand. He said that high-speed processes designed for calculators for abstruse scientific theories lend themselves to high-speed processes for all sorts of data recording and processing and that the next industrial revolution is certain to transform the lower middle class of clerks.

Honorary life memberships in SGA were presented to C. H. Zachry, a past president of both SGA and A. G. A. and recently retired as president of Southern Union Gas Company, and John C. Flanagan, vice president of United Gas Corporation. Mr. Zachry also was given a special award by Wister H. Ligon, A. G. A.'s president, for his zeal in heading A. G. A.'s television committee.

Other new officers of SGA are H. A. Eddins, Oklahoma Natural Gas Co., first vice president; C. L. Nairne, New Orleans Public Service, second vice president; Willard G. Wiegel, Lone Star Gas Co., treasurer; B. F. Wombacker, Southern Union Gas Co., assistant treasurer; Frank Barragan, Jr., South Atlantic Gas Co., secretary.

Minor C. Sumners, Mississippi Valley Gas Co., is chairman of the advisory council, and W. C. McGee, Jr., Tennessee Gas Pipeline Co., is vice chairman.

New directors are Kenneth R. Teele, Mobile Gas Service Corp.; M. V. Burlingame, Natural Gas Pipeline Co. of America; Van F. Leach, Hardwick Stove Co.; Carrington Mason, Houston Natural Gas Corp.; A. B. Paterson, Louisiana Gas Service Co.; Dwight B. Sprow, Houston Texas Gas and Oil Corp.; and L. O. Vogelsang, Rio Grande Valley Gas Co.

New chairmen and their respective sections are: accounting, Mr. Wombacker; distribution, Howard Higgins, Alabama Gas Corp.; employee relations, Benjamin R. Hendrix, Atlanta Gas Light Co.; sales, B. E. Harrell, Arkansas Louisiana Gas Co.; transmission, W. B. Haas, Northern Natural Gas Co.

New officers of the Southern Gas Association are (l. to r.) B. F. Wombacker, assistant treasurer; Frank Barragan, Jr., secretary; James A. Wilson, president; W. C. McGee, Jr., vice chairman of the advisory council; Willard G. Wiegel, treasurer; C. L. Nairne, second vice president; and A. B. Paterson, director

New Arkla sign sells gas with gas

A new gas sign, manufactured by Arkla, now makes it possible to advertise gas with gas. Sign operates by self-contained photoelectric control

A NEW COMMERCIAL sign completely illuminated, operated, and animated by gas is now being marketed by Arkla Air Conditioning Corp., Little Rock, Ark.

The revolutionary Gasign by Arkla is one of the few new gas-burning appliances to be introduced in the last decade. It is believed to be the first commercial gas-lighted sign ever developed. The signs are available for operation on natural or LP-gas.

The Gasign is the second completely new gas-using product to be introduced to the national market by Arkla in the last two years. In early 1958 it brought out its Gaslite and has since developed over a dozen models of it and accessories.

The gas signs consist chiefly of two specially developed, highly tempered frosted glass side panels for the user's advertising message that are mounted on a metal frame, with a row of mantle-covered gas burners glowing inside. A translucent coat of white enamel glazed to the inner surface assures well-distributed illumination. The black steel frame is weather-proofed and has top venting.

Individualized messages for Gasigns by Arkla can be imprinted locally, with the use of heat-resistant paints. The manufacturer also offers a service whereby it will arrange for the imprinting. A new Arkla-designed self-contained photoelectric control which generates its own current with thermocouples, thus requiring no electrical connection, is available as optional equipment. By simple redirection of photocells, the signs can be made to blink automatically.

Fair coordinator chosen

STANLEY FINCH, who as an employee of The Brooklyn Union Gas Co., Brooklyn, N. Y., acted as coordinator for the gas industry at the 1939 World's Fair, has been employed jointly by A. G. A. and the Gas Appliance Manufacturers Association (GAMA). Working in liaison with Thomas J. Shanley, secretary of the Accounting Section of A. G. A., Mr. Finch will be coordinator for the A. G. A.-GAMA participation in the 1964 World's Fair.

Mr. Finch has headquarters at the Engineers' Club, New York, N. Y., and has contacted officials of the 1964 fair. Contacts with Mr. Finch should be made through Mr. Shanley, who will serve the A. G. A. World's Fair Committee. Chairman of the committee is John E. Heyke, of The Brooklyn Union Gas Company.

U.S.S.R. at gas meeting

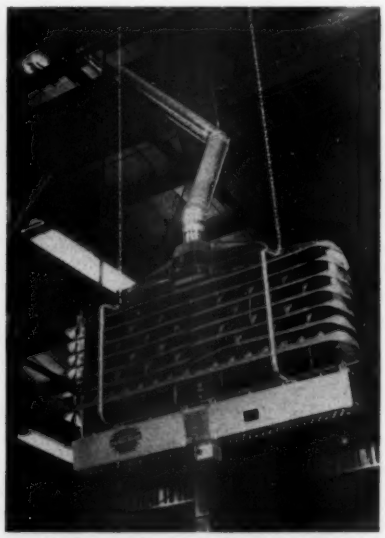
THE COUNCIL of the International Gas Union of Brussels, Belgium, met recently in Praha, the capital of Czechoslovakia, under the chairmanship of B. M. Nilsson.

Present at the meeting were delegates of the national gas associations of Belgium, Czechoslovakia, Denmark, the Federal Republic of Germany, France, Great Britain, Italy, the Netherlands, Roumanian People's Republic, Sweden, and the Union of Soviet Socialist Republics.

Berkshire supplies gas for new infrared heating system

THE LARGEST GAS-FIRED infrared radiant heating installation of any industrial plant east of the Mississippi River is, according to officials of The Berkshire Gas Co., Pittsfield, Mass., the one recently installed at the E. D. Jones Corporation in Pittsfield. The corporation, a member of the group comprising the largest exclusive manufacturer of papermaking machinery in the world, makes use of 138 Panelbloc units. The largest such system is in Fort Hood, Texas, where 2,500 units were installed.

The infrared units, located to insure an overlapping blanket of heat, are suspended throughout the Jones plant at an average height of 15 feet. Higher operating temperatures than those formerly attainable in infrared heating, in use since 1949, can be reached through combustion of gas on the surface of a ceramic mat. Each ceramic unit is perforated with 200 holes per square inch, through which is fed an air-gas mixture. Surface temperatures of 1,650°F. may be attained.



Gas heats over 200,000 square feet of space in plant and offices of the E. D. Jones Corporation's new facility. Installed in ceiling, each Panelbloc unit (see picture at right) is capable of heating an area covering 900 square feet and has its own thermostat. Units have no motors, fans, or moving parts.

According to Everett A. Kelsey, vice president-sales of Berkshire Gas, one of the principal factors affecting the corporation's purchase of infrared equipment in lieu of a central heating plant was a state ordinance requiring 24-hour attendance by a licensed engineer of any boiler equipment in excess of 15 pounds pressure. In the case of the E. D. Jones factory, cost for such required engineer service was nearly equal to the cost of fuel.

Space limitations within the plant and excessive cost of large-size pipe for low-pressure operation were other reasons affecting their choice. The need for heating facilities that would not obstruct overhead cranes in the bays of the factory was a contributing factor. Too, by concentrating heat in work areas, the infrared system eliminates waste heat at ceiling level.

Radiant energy, like light energy, may be aimed like a flashlight and reflected and focused by metal mirrors. Passing through space at the speed of light, it loses no energy to the air through which it passes. When it contacts the solid object at which it is aimed, part of the radiant energy is absorbed and converted to heat. The rest is reflected away from the object. The effect is like that of sunlight on a cool day, with the body being warmed instantly while the air remains cool.

Southern Counties' building changes Los Angeles skyline

SOUTHERN COUNTIES Gas Co., Los Angeles, Calif., recently dedicated its new 13-story headquarters in a gas-lighting ceremony. The 115-square-foot, $2.3 million building was designed and engineered by Albert C. Martin and Associates.

The columns of the steel-frame and lightweight-concrete structure are supported on spread footings, and the absence of sheer walls permits a completely open ground floor for display purposes. The building is air conditioned throughout.

Its north facade is of curtain wall construction, with blue, black, and white porcelain enamel; exposed satin-finish aluminum; and gray solar glass.

Atop the structure rises a giant Blue Flame sign. It consists of three groups of porcelain enamel vanes, with four vanes in each group and a central white plastic bubble that is two feet in maximum diameter and six feet high. The sign is lighted by fluorescent tubes. It took two truck cranes with booms more than 220 feet long to lift the 48-foot flame to the roof.

In addition to housing Southern Counties personnel, the building will provide executive offices for Pacific Lighting Corporation and Pacific Lighting Gas Supply Company.

Guy W. Wadsworth, Jr., at left, president of Southern Counties, lights gas lamp. Watching (l. to r.) are Donald Buckingham, president, Downtown Business Men's Association; W. M. Jacobs, Pacific Lighting Gas Supply; James Cantlen, president, Los Angeles Chamber of Commerce; and F. M. Banks, president, Southern California Gas Company. At right, new headquarters contrasts with older architecture

First six-level natural gas producer completed in Texas

COMPLETION of the first well to produce natural gas from six different levels at the same time was recently announced by Sunray Mid-Continent Oil Co., Tulsa, Okla.

The completion breaks the month-old record of a quintuple producer off the Louisiana coast. The new well is located in the North Laward field of Lolita, Texas.

Initial tests on the well gauged 2,770,000 cubic feet of gas a day through chokes from six zones ranging from 4,600 to 6,650 feet.

The North Laward field is characterized by thin zones which tend to shale out from one location to another and are uneconomical to produce.

Sunray engineers conquered the economics of the project with a tubingless completion. Three strings of two-and-seven-eighths-inch tubing were run with S nipples used as a packer seat. Inside the tubing, Sunray ran one-and-a-half-inch tubing and finaled each string of the tubing bundle as a conventional dual completion.

The six-in-one project was designed and completed by Paul E. Robinson, district staff engineer for Corpus Christi, Texas, and Tuney Burger, drilling foreman.

El Paso Natural, Rexall unite in venture

A MAJOR joint venture in production and marketing of petrochemicals has been announced by Paul Kayser, chief executive officer of El Paso Natural Gas Co., El Paso, Texas, and Justin Dart, president of Rexall Drug and Chemical Company.

The venture will include plants at Odessa, Texas, for the production of olefins, polyolefins, and chemicals. The first plants to be built are scheduled to begin production in early 1962 and will produce ethylene, propylene, conventional polyethylene, linear polyethylene, and polypropylene.

Initial capacity of the olefin plant will be in excess of 200 million pounds per year, and the combined capacity of the polyolefin plant will be in excess of 150 million pounds per year. El Paso Natural Gas Company will furnish the raw materials for the plants.

Ralph Knight, president of Rexall Chemical Company, will direct the polymer and chemical plant operation.

American gas water heater standards approved

TWO NEW American standards for gas water heaters have been approved by the American Standards Association and published by A. G. A.

American Standard Approval Requirements for Gas Water Heaters, Volume I, Z21.10.1-1959, applies to all but side-arm-type water heaters having input ratings less than 50,000 Btu per hour. American Standard Approval Requirements for Gas Water Heaters, Side-Arm Type, Volume II, Z21.10.2-1959, applies to side-arm-type heaters with input ratings less than 50,000 Btu per hour and designed for use with auxiliary storage systems for domestic service. Heaters covered by these requirements usually contain water-carrying parts of the tubular or cast element design.

These new American standards are intended to cover design, fabrication, and performance requirements of the water heaters covered for fuel gases, such as natural gas, manufactured and mixed gases, liquefied petroleum gases, and LP-Gas-air mixtures.

A. G. A. is administrative sponsor of ASA Sectional Committee Z21 concerned with approval and installation requirements for gas burning appliances.

American Standards Z21.10.1 and Z21.10.2 are available at $2 per copy from the American Standards Association, Department PR149, 10 East 40th St., New York 16, N. Y.

Genie is PAM award

Anne Kyes of the Canadian Gas Association holds Gas Genie Annual Promotion, Advertising, and Merchandising (PAM) Man of Year Award to be presented at the group's convention this month

NGAA confers Hanlon Award on Karl Hachmuth of Phillips

THE HANLON AWARD, highest honor in the natural gasoline industry and one of the ranking awards of the petroleum industry, has been conferred on Karl H. Hachmuth, staff consultant, research and development department, Phillips Petroleum Co., Bartlesville, Okla. The ceremony took place at the 39th annual convention of the Natural Gasoline Association of America that was held at the Rice Hotel in Houston, Texas.

Mr. Hachmuth is the 24th recipient of the Hanlon Award, which is conferred annually by the NGAA for outstanding service to the natural gasoline industry. Donor of the award is E. I. Hanlon, a pioneer in the natural gasoline industry, and chairman of the board, National Bank of Tulsa, Tulsa, Okla.

The presentation was made by NGAA president, Charles E. Webber, Sun Oil Co., Philadelphia, Pa.

Gas-fired infrared heat cuts cost of coal preparation

GOVERNMENT scientists have concluded that use of a gas-fired infrared source of heat energy halves the cost of removing water from filter cake in coal preparation by conventional thermal drying. The conclusion was published recently in a report issued by the Bureau of Mines, of the U. S. Department of the Interior.

In the bureau's investigations, a gas-fired infrared heater was used because it is an economical high temperature source and because thermal efficiency could even be increased in a commercial application by drawing flue gases through filter cake.

The gas-fired unit used in the test burns a mixture of gas and air on the surface of a ceramic unit having 200 holes per square inch through which the gas is introduced. The unit was furnished by Equipment Engineering Company and manufactured by the Perfection division of Hupp Corp., Cleveland, Ohio. The heater design is based on patents of German scientist Gunther Schwank that were developed into units by Perfection.

Highlights of cases before the Federal Power Commission

Bureau of Statistics, American Gas Association

Certificate cases

● **Atlantic Seaboard Corp.** has proposed to construct about 20 miles of loop pipeline in Virginia and Maryland at an estimated cost of $1.9 million. The facilities would enable the company to increase the capacity of its Cobb-Baltimore pipeline in order to meet increased requirements of existing customers during the 1960-1961 winter.

In another certificate case, the company has been authorized to construct nearly 21 miles of loop pipeline in Virginia and West Virginia and to build a new 8,000 horsepower compressor station in West Virginia. These facilities, estimated to cost $5.6 million, will be used to meet the increased demands of customer companies serving the Washington, D. C., and Baltimore, Md., areas.

● **Columbia Gulf Transmission Co.** has filed an application for the construction of an additional dual 24-inch underwater pipeline crossing of the Mississippi River in Louisiana at a cost of about $3.5 million. The existing underwater lines are poorly located due to changes that have occurred in the river, and a new underwater crossing is necessary.

In another certificate case, the company's budget-type application was authorized by the commission. These facilities to attach new gas reserves when they are available are not to exceed a total cost of $2.5 million, with single projects limited in cost to $500,000.

● **El Paso Natural Gas Co.** has been temporarily authorized to construct and operate a total of 3,470 compressor horsepower in various size units at locations on the Bisti Field gathering system in New Mexico. These facilities, to cost $1.5 million, will be used to take up to 17 million cubic feet of casing head natural gas per day from producers in the Bisti Field.

● **Equitable Gas Co.** has filed application to construct and operate about 58 miles of 16- and 20-inch pipeline in West Virginia and Pennsylvania at an estimated cost of $5.4 million. These facilities, to be built during the years 1960 through 1962, will increase the system delivery capacity by 76 million cubic feet of natural gas daily.

● **Kansas-Nebraska Natural Gas Co.** has filed a budget-type application to facilitate securing new natural gas reserves as they become available. Single projects will be limited in cost to $400,000, and the total of all projects will not exceed $1.5 million.

● **Michigan Wisconsin Pipe Line Co.,** in a budget-type filing, has proposed to construct natural gas facilities when they are required to attach newly available reserves to its system. The total cost of all projects will not exceed $3 million, with each project limited to a cost of $500,000.

● **Tennessee Gas Transmission Co.** has been granted temporary authority to construct and operate approximately 12 miles of pipeline, at an estimated cost of $1 million, to take natural gas from the Block 17 Field, East Cameron area offshore Louisiana. The company estimates proven natural gas reserves of nearly 103 billion cubic feet underlay about 1,100 of the total 8,400 acres now under lease.

● **Texas Gas Transmission Corp.** has also filed a $3 million budget-type construction application, with single projects for adding newly acquired gas reserves limited in cost to $500,000.

● **Transcontinental Gas Pipe Line Corp.** has been authorized to construct natural gas facilities, from time to time, to take into its system newly acquired gas supplies. Single projects are limited in cost to $500,000, and all projects will not exceed a total of $3 million.

● **Transwestern Pipeline Co.** has been authorized to construct in 1960 natural gas facilities whose total cost will not exceed $3 million. In this budget-type authorization, the cost of any single project is limited to $500,000.

● **Trunkline Gas Co.** also has received approval of its budget-type construction program to secure new gas supplies when they become available. The over-all cost of all facilities will not exceed a total of $1.8 million, with single projects limited in cost to $400,000.

Rate cases

● **Michigan Wisconsin Pipe Line Company's** proposed $8.5 million or 10 per cent annual wholesale natural gas rate increase has been suspended until October 7, 1960, when it may be collected, subject to refund, if the hearing has not been concluded earlier. The proposed increase would affect 23 existing customers and 15 new customers, to be added to the transmission system in Illinois, Iowa, Michigan, Missouri, and Wisconsin. The need for higher rates was prompted by the increased cost of purchased gas, the need to recover the cost of obtaining Canadian gas, higher labor costs, and the need for a 6¾ per cent rate of return.

● **Mississippi River Fuel Corp.** has had its $2.6 million or 8.2 per cent annual wholesale natural gas rate increase suspended, pending hearing and decision. The proposed increase would be effective for 15 wholesale customers in Arkansas, Illinois, and Missouri. The need for higher rates is predicated on the increased cost of purchased gas; increases in wages, salaries, taxes; and the cost of capital. The company also claims an 8 per cent rate of return on its transmission system and a return of 23 per cent, before income taxes, on its production division.

● **Panhandle Eastern Pipe Line Company's** proposed $7.1 million or 6.1 per cent annual wholesale natural gas rate increase has been suspended until July 1, 1960,

when it may be put into effect, subject to refund. The proposed rates are to offset the increased cost of purchased gas, including purchases from a subsidiary, Trunkline Gas Co.

SUMMARY OF INDEPENDENT GAS PRODUCER RATE FILINGS—MARCH, 1960

	Number	Annual Amount
Tax rate increases allowed without suspension	5	$ 579
Other rate increases allowed without suspension	44	286,394
Rate increases suspended	91	2,203,091
Total rate increases	140	2,490,064
Tax rate decreases allowed without suspension	2	2,191
Other rate decreases allowed without suspension	—	—
Total rate decreases	2	2,191
Total rate filings (all types)	687	—
Total rate filings acted on from June 7, 1954, to March 31, 1960	45,939	—
Rate increases disposed of after suspension during March, 1960	80	3,124,667
Amount allowed	—	2,568,531
Amount disallowed	—	—
Amount withdrawn	—	556,136
Rate increases suspended and pending as of March 31, 1960	3,198	$158,641,969

In other FPC actions, the **St. Lawrence Gas Co.** was authorized to import Canadian natural gas to serve the Massena-Ogdensburg area of the State of New York. The decision by Presiding Examiner Purdue denied an application by the **New York State Natural Gas Corp.** to serve the same area with gas produced in the U. S. While noting that the National Energy Board of Canada has not approved the export of gas to St. Lawrence Gas Co., the examiner stated he decided in favor of the project because it has available a more adequate and reliable gas supply than New York State Natural Gas Co. and because it is in the public interest for U. S. markets to be supplied with Canadian gas to conserve our own natural gas reserves.

In another action, FPC Presiding Examiner Weston filed a decision authorizing **Pacific Gas Transmission Co.**, a new proposed interstate pipeline, **El Paso Natural Gas Co.**, and the **Montana Power Co.** to import an average of 584.5 million cubic feet of natural gas per day from fields in Alberta, Canada, for ultimate consumption in California, Idaho, Montana, Oregon, and Washington. The necessary export authorizations have been obtained from both the Alberta government and the Canadian National Energy Board.

The FPC has scheduled oral argument for May 12, 1960, on the issue of whether **Panhandle Eastern Pipe Line Co.** should be allowed to use a commodity value in pricing natural gas that it produces. In a recent rate case, a presiding examiner ruled that the company had not shown it was entitled to the use of the field price approach in pricing its own produced gas. The company filed exceptions to the examiner's decision and later requested the reopening of the case.

PUAA elects officers, presents Better Copy Contest Awards

THE PUBLIC UTILITIES Advertising Association (PUAA) elected Frank C. Lietz, advertising manager of Northern Illinois Gas Co., Bellwood, Ill., as president at its 39th annual convention held in May, 1960, in New York, N. Y. Mr. Lietz has succeeded Warren Widenhofer, public relations director of Indiana and Michigan Electric Company.

Jack A. Fleming, director of public relations and advertising for Canadian Western Natural Gas Co., Calgary, Alberta, Canada and Northwestern Utilities, Edmonton, Alberta, Canada, was elected first vice president at the convention. James W. Lumpp, advertising manager of Union Electric Co., St. Louis, Mo., was chosen as second vice president. Elton E. Stuenckel, sales promotion and advertising manager of South Jersey Gas Co., Atlantic City, N. J., was named third vice president.

Robert N. Robertson, director, residential development department, Florida Power Corp., St. Petersburg, Fla., was re-elected secretary, and Mean Schenck, director of public information for Interstate Power Co., Dubuque, Iowa, was re-elected treasurer.

Delegates attending Thursday's luncheon session of the meeting heard C. S. Stackpole, A. G. A.'s managing director, in an address. On Friday morning, Curtis Morris, manager of the Washington office of A. G. A., spoke on "What Washington Is Doing to Us." The morning ended with the Better Copy Contest Awards, the oldest continuous annual advertising competition in the world. Ninety-four utility companies in the U. S., Canada, and Cuba won honors at the convention in 21 classifications of advertising and public relations material.

The Washington Water Power Company won five awards at the convention; and six companies won four awards each. They are Northern States Power Co., Philadelphia Electric Co., South Atlantic Gas Co., Southern California Edison Co., British Columbia Electric Co., and Hawaiian Electric Co.

Firms winning three awards at the May meeting include Commonwealth Edison Co., East Ohio Gas Co., Hope Natural Gas Co., Intermountain Gas Co., and Kansas Power and Light Company.

Little buys Tamco

H. C. LITTLE Burner Co., San Rafael, Calif., has purchased Tamco Corp., Sebastopol, Calif. Tamco will continue to operate as a separate enterprise.

Tamco manufactures the Clipper brand of forced-air furnaces and air conditioning equipment and the Barnes brand of gas-fired floor furnaces. These products have been marketed regionally in the West. Sales and service will continue through H. C. Little representatives.

$1,300 in bonds awarded by utility

Milton J. Pfeiffer, vice president, Cincinnati Gas and Electric Co., Cincinnati, Ohio, hands out prizes of savings bonds to three winners of a company contest. From l. to r. are Danny Barger, who won a $200 savings bond; Della Martin, $100 bond; Bruce Heider, $1,000 bond. Contestants drew colored sketches of their homes and supplied statements on "Why We Like To Heat with Gas at Our House"

Indiana Gas Association elects Rees

New officers of the Indiana Gas Association, George R. Woehler (l.), first vice president, and Carl D. Rees, president, shake hands

THE INDIANA Gas Association at its 50th annual convention in April, 1960, elected Carl D. Rees as president. Mr. Rees is vice president, general operations, for Northern Indiana Public Service Co., Hammond, Ind. About 350 delegates attended the meeting at French Lick, Ind., of the association that represents gas manufacturing, transmission, and distributing utilities in Indiana.

George R. Woehler, vice president and controller of Southern Indiana Gas and Electric Co., Evansville, Ind., was elected first vice president. Louis A. Kirch, vice president and chief engineer of Indiana Gas and Water Co., Indianapolis, Ind., was elected second vice president. R. A. Steele, of Citizens Gas and Coke Utility, Indianapolis, was re-elected secretary-treasurer.

Caloric awards $2,000

CALORIC Appliance Corp., Jenkintown, Pa., has awarded the first Klein Foundation Scholarship to Kerry Wagaman, a student at Brandywine Heights Joint High School, Topton, Pa.

The four-year scholarship, named in honor of Samuel Klein, founder of Caloric, is based on scholastic standing and extracurricular activities. It provides $500 per year or a total of $2,000 for the student at a college or university of his choice.

Seminar and follow-up bring results

RESULTS of the gas air conditioning seminar held in March, 1960, by Michigan Consolidated Gas Co., Detroit, Mich., have shown up in an increase in the specification of gas-fired air conditioning by architects. Approximately 200 persons attended the seminar, including members of the Michigan Chapter of the American Institute of Architects, engineers of the Board of Education of Detroit, and prominent mechanical engineers from the Detroit area.

F. A. Kaiser, vice president and general sales manager of the company, has attributed the successful results to this four-point follow-up program:

1. Complete lists of all in attendance were given to manufacturers. They combed from these a new source of prospects.

2. Manuals including specification sheets on all available gas air conditioning equipment and the names of factory men were distributed as reference pieces to all.

3. Personal calls are being made by representatives of Michigan Consolidated and by factory representatives, and more active architects are being serviced with greater regularity than ever before.

4. All new construction is being followed up with personal calls and mailing.

Mr. Kaiser said that the results of Michigan Consolidated's first large-scale air conditioning program show that the company has only scratched the promotional surface of this vast load building market. Additional meetings must be held to further educate the industry to the advantages of gas air conditioning and, in conjunction with sales meetings, constant and consistent follow-up calls must be made to augment the company's market position.

List of publications for month of June issued by A.G.A.

ACCIDENT PREVENTION

• **Use of Combustible Gas Indicators.** Black and white 35 mm. sound slide film. $10. Available free on loan from A. G. A. Cat. no. 45/AP.

RESEARCH

• **High Speed Oven Design and Baking Studies, Part I—The Polythermic Oven,** by T. E. Hampel. Research Bulletin 81. $2. Cat. no. 34/IR.

PUBLIC INFORMATION

• **A. G. A. Annual Report,** 1959. Free. Cat. no. 4c/PB.

OPERATING

• **The Underground Storage of Gas in the United States,** by the Subcommittee on Underground Gas Storage Statistics. Free. Cat. no. OP-60-1.

NEW FREEDOM

• **The Jimmy Stewarts' "Instant" Kitchen.** Reprint from the *Ladies' Home Journal.* Seven and a half cents each. Cat. no. 72/K.

GENERAL MANAGEMENT

PLEASE NOTE: Registered delegates to the General Management Conference are entitled to only one free set of the following list of conference papers. Cost to all other members and non-members is 25 cents each.

• **Future Trends of Interest Rates and Their Significance for the Gas Industry,** by James N. Land. 25 cents each. Cat. no. 47/G1.

• **The Mexican Gas Industry,** by Antonio Garcia Rojas. Cat. no. 47/G2.

• **A Review of Economics of Liquefied Natural Gas for Peak Shaving,** by A. Russell Young. Cat. no. 47/G3.

• **The Economic Significance of Liquefied Natural Gas—The Distribution Company's Viewpoint,** by M. Anuskiewicz, Jr. Cat. no. 47/G4.

• **The Institutional Investor Looks at the Gas Business,** by J. C. Hunsaker, Jr. Cat. no. 47/G5.

• **Energy Resource Patterns,** by S. H. Schurr. Cat. no. 47/G6.

• **The Effect of Natural Gas on Trees,** by P. P. Pirone. Cat. no. 47/G7.

• **The B31.8 Code as It Affects the Purchasing and Stores Function,** by W. M. Frame. Cat. no. 47/G9.

• **The Application of Electronic Data Processing to Purchasing and Stores Operations,** by T. F. Harrigan. Cat. no. 47/G10.

• **Material Handling Subcommittee Progress Report,** by Fred McCarroll. Cat. no. 47/G11.

• **Area Development: Its Advantage to a Gas Company,** by R. T. Klemme. Cat. no. 47/G12.

• **Preferred Stock as a Medium for Gas Utility Company Financing,** by E. P. Lebens. Cat. no. 47/G13.

STATISTICS

• **Monthly Bulletin of Utility Gas Sales, February,** 1960. $1 per year by subscription. Cat. no. 60/S2.

• **Monthly Bulletin of Utility Gas Sales, March,** 1960. $1 per year by subscription. Cat. no. 60/S3.

• **A Coordinated Marketing Research Program for Gas Utilities.** $3. Cat. no. 57/S.

UTILIZATION

• **Commercial Kitchen Ventilation,** by Edgar A. Jahn. Manual on requirements for an effective ventilation system in the commercial kitchen, design fundamentals for component parts of the system, and effect of cooking appliances and exhaust systems on air conditioned areas. 50 cents each. Cat. no. 24/U.

• **Gas and Electric Heating in Two Schools at Angola, New York.** Summary of findings of study made at schools near Buffalo, N. Y. Contains data on fuel and equipment costs, fuel consumption, and operating comparisons not generally recognized. 15 cents each. Cat. no. 25a/U.

• **Contaminant Emissions from the Combustion of Fuel,** by Chass and George. Contaminant emissions of natural gas and oil are compared for 30 items of industrial equipment. 30 cents each. Cat. no. 26/U.

INDUSTRIAL AND COMMERCIAL

• **POP—People on Programs.** A promotion portfolio planned to bring the industrial and commercial gas story to gas utility service areas. Free. Cat. no. 92/I.

• **1960 A. G. A. Commercial Gas School Lectures.** Loose-leaf three-ring binder of lectures. $5. Cat. no. 94/I.

New York State Natural to provide tuition for scholar

NEW YORK STATE Natural Gas Corp., Pittsburgh, Pa., has awarded its 1960 Gas Technology Option Scholarship to Robert J. Anderson of Snyder, N. Y. Mr. Anderson will study chemical engineering at Illinois Institute of Technology and in his junior and senior years will take gas technology option courses, which prepare young men for positions in the gas industry.

Mr. Anderson will graduate in June from Amherst Central High School in the top 10 per cent of his class. New York Natural will provide tuition fees while he is attending Illinois Tech and will offer him summer employment during vacations.

Linde Company introduces gas torch with wide cutting range

A NATURAL GAS cutting torch capable of cutting through 30 inches of metal was recently introduced by Linde Company, a division of Union Carbide Corp., New York, N. Y. The Oxweld C-66 has a gas flow of up to 3,000 cfh of oxygen and 250 cfh of natural gas, which is the widest cutting range of any existing hand cutting torch.

Interchangeable injectors permit use of the new torch with either low- or medium-pressure natural gas. A spring-loaded injector assembly provides uniform mixing of gases and prevents flashback.

The company has reported that extensive field tests show operating costs of the C-66 torch are 15 per cent lower than those of other natural gas torches because of the faster starts and quicker cutting allowed by its large capacity.

Forty types of nozzle are available for use with the torch, including those for scarfing, gouging, and rivet piercing. Bendable long-length nozzles for use in riser cutting and in jobs in inaccessible places are available.

Robertshaw division honored for safety in operations

THE NATIONAL Safety Council's Award of Honor, the nation's highest recognition for safety in industrial operations, has been awarded to the Grayson Controls division of the Robertshaw-Fulton Controls Co., Richmond, Va.

The Grayson division, Long Beach, Calif., was one of 21 plants in the machinery field in the U.S. that were selected for the award.

The award was in recognition of the plant's completion of more than 3,000,000 consecutive man-hours of operation without a disabling injury during the period ended December 31, 1959. In Grayson's case, the citation indicated a total of 3,809,896 man-hours without a lost-time injury from September 24, 1958, to December 31, 1959.

Grayson's outstanding safety record actually continued beyond the cut-off date in 1959 until March 24, 1960, for a total in excess of 4,000,000 consecutive man-hours without a lost-time injury.

Wilbur F. Jackson is vice president and general manager of the Grayson division.

Ohio lad demonstrates prize model fuel cell at symposium

THE EAST OHIO Gas Company, Cleveland, Ohio, and a high school scientist recently focused the attention of Cleveland on the provocative idea of producing electricity from gas.

James W. Hacker, Jr., a 16-year-old student, constructed for exhibit at the Northeastern Ohio Science Fair a model fuel cell, showing how oxygen and hydrogen are chemically combined to produce electricity. His project, which won a first prize in the physical science category, caught the attention of East Ohio officials.

Mr. Hacker was invited to demonstrate his working model at the gas company building before East Ohio's top officials and engineers and representatives of the A. G. A. Laboratories and local newspapers.

At the symposium, Mr. Hacker showed how the fuel cell converts the chemical energy of gases directly into electricity. The conversion is achieved by introducing gaseous fuel and oxygen into the fuel cell where they are merged in a controlled climate to produce electricity.

He told his audience that the action in the cell is like two jugglers simultaneously pitching and catching a steady stream of balls—the molecules—supplied by the fuel and oxygen lines. Some of the balls are ejected from the cell as electrical energy. These are used for power and then are returned to the cell to perpetuate the process. As long as fuel is supplied, electricity continues to be produced.

The advantages of the fuel cell, he pointed out, are high rate of efficiency; simplified generating equipment; and that, theoretically, the fuel cell, since it has no moving parts, can never wear out.

"The biggest problem in this type of cell is the cost of pure hydrogen," Mr. Hacker explained. This is where natural gas enters the picture. He pointed out that once natural gas has been cracked, it can be used to operate a fuel cell such as his.

Frank E. Hodgdon, director of the A. G. A. Laboratories, told the symposium that the fuel cell has the potential of providing an individual source of electricity for every home. He predicted that fuel cells, connected to natural gas lines and absorbing oxygen from the air, will someday provide electricity for household needs.

Mr. Hodgdon revealed that A. G. A. is sponsoring two studies for the development of the fuel cell principle, with natural gas used as a fuel. The principle of the fuel cell is not new, but it has been only recently that the principle has been practically applied.

Sixteen-year-old James W. Hacker, Jr., discusses his working fuel cell model with Frank E. Hodgdon (l.) and Dr. F. E. Vandaveer, director of research for Consolidated Natural Gas Company, parent firm of East Ohio. Mr. Hacker spent five months in design and construction of the model, which cost him $20

Personal and otherwise

Tuggle succeeds Gowans

THE HONOLULU Gas Co., Honolulu, Hawaii, recently named George B. Tuggle senior vice president of the company to succeed L. Lyman Gowans, who retired last year and continues to serve as a member of the board.

Mr. Tuggle, a graduate of the U.S. Naval Academy, joined the gas company in 1946 as a construction and maintenance engineer at the Iwilei gas manufacturing plant. He became plant superintendent in 1950 and was named a vice president in 1956. His appointment was made by the company's board of directors after its 55th annual meeting.

Directors re-elected all other officers of the local utility, including E. E. Black, chairman; James C. Stopford, president; J. Howard Worrall, vice president; Lowell E. Mee, secretary and treasurer; and Richard E. Robb, assistant secretary and treasurer.

Noppel, Ebasco vice president, retires

EDWARD P. NOPPEL, vice president of Ebasco Services, New York, N. Y., has retired from the gas industry. Mr. Noppel has been active in A. G. A. since 1942.

He held chairmanships, for a number of years, of the Association's Committee on Coordination of Research, Special Committee for Investigation of Laboratories Test Fees and Requirements Policies, and General Research Planning Committee. He served for many years on the Managing Committee of the Natural Gas Department.

He was also a member of the Committee on Promotion, Advertising, and Research.

A.G.A. honors Leinroth of Public Service

J. PAUL LEINROTH, retiring manager of industrial and commercial sales for Public Service Electric and Gas Co., Newark, N. J., was recently honored by his company and A. G. A. in a joint ceremony.

Donald C. Luce, president of Public Service, presented Mr. Leinroth with a gift on behalf of the company. In recognition of his outstanding contributions to the work of the General Promotional Planning Committee, Mr. Leinroth also received a silver tray from A. G. A.'s director of promotion and advertising, Norval Jennings.

Among other activities with A. G. A., Mr. Leinroth served as chairman of the Industrial and Commercial Gas Section.

Te Kolste named general manager of utility

D. Te Kolste

DALE TE KOLSTE has been promoted to vice president and general manager of the Peoples Natural Gas Division of Northern Natural Gas Co., Omaha, Neb. He has succeeded Donald L. Sedgwick, who recently retired as head of the company's distribution division, which serves 119 communities.

Mr. Te Kolste attended the University of Nebraska where he earned degrees in law and business administration. He joined Northern in 1948 as a right of way and claims agent. Promoted and transferred to the company's legal staff in 1950, he was named senior attorney in 1955.

He was made administrative assistant in the Peoples division in 1958 and last year was promoted to assistant general manager.

Mr. Sedgwick has been associated with the gas industry since 1919 and with Northern since 1951.

He was named general manager of the Peoples division and was elected a vice president of Northern in 1958.

Young elected chairman of board, Loomis president at Columbia

C. E. Loomis

G. S. Young

THE BOARD of directors of The Columbia Gas System recently elected George S. Young chairman of the board and chief executive officer. Cecil E. Loomis was elected president to succeed Mr. Young.

Mr. Young began his career in the natural gas industry in 1930 when he joined Columbia Engineering and Management Corporation as a junior engineer. He went to New York in 1942 as vice president of what is now Columbia Gas System Service Corporation. In 1946 he was elected a director of the parent corporation and vice president in charge of operations for the service corporation. In 1949 he was elected executive vice president of The Columbia Gas System and two years later became the parent company's president.

Mr. Loomis has spent virtually all of his career with Columbia, which he joined in 1928 in Columbus, Ohio. In 1950 he was named assistant vice president of Columbia as chief aide to Mr. Young. He was named vice president in 1951 and was subsequently senior vice president.

Mr. Loomis is also president of Columbia Hydrocarbon Corporation, one of Columbia's newest subsidiaries, which operates a fractionation plant at Siloam, Ky.

Schmidt promoted

THE DIRECTORS of Consumers Power Co., Jackson, Mich., have elected Walter C. Schmidt a vice president of the company. Mr. Schmidt formerly was manager of engineering and construction. He will be in charge of purchasing and stores.

The directors also elected Robert D. Allen as assistant to the president. Mr. Allen was formerly coordinator of consulting engineering services.

At the same meeting the company's new steam electric generating plant, now under construction at Port Sheldon on Lake Michigan which is about 30 miles west of Grand Rapids, Mich., was named the James A. Campbell Plant in honor of the company's new president. The first 265,000 kilowatt unit is scheduled for operation in 1962.

Reid becomes Southern Union president

J. C. Reid

JAMES C. REID has been elected president of Southern Union Gas Co., Dallas, Texas, by the company's board of directors.

Mr. Reid succeeds C. H. Zachry, who has retired after serving as president for the last 15 years. Mr. Reid has been associated with the firm for 25 years and has been executive vice president for the past eight years.

Other newly elected officers of the gas utility are Scott Hughes, executive vice president; A. M. Wiederkehr, vice president, gas supply and exploration; N. P. Chesnutt, vice president and operating manager; and H. V. McConkey, secretary-treasurer.

In addition, the board named J. R. Cole as senior vice president; Tom Corr as vice president, northwest division; and E. M. Kelley as vice president, southwest division.

Others include B. F. Wombacker, controller and assistant treasurer; A. S. Grenier, general attorney and assistant secretary; F. D. Bradley, assistant treasurer; and Mrs. Ethel Johnson, assistant secretary.

Stockholders elected the following as directors: Wofford Cain, J. Glenn Turner, Mr. Zachry, Mr. Reid, Mr. Hughes, Franklin W. Denius, Thornton Hardie, and John MacGuire. Mr. Cain was elected chairman of the board, Mr. Turner named general counsel.

MacNichol elected

GEORGE POPE MACNICHOL, Jr., president of Libbey-Owens-Ford Glass Company, has been elected a director of The Columbia Gas System.

Mr. MacNichol has been engaged in glass manufacturing for 40 years and is the fourth generation of his family in the business. He joined the Edward Ford Plate Glass Company, in which his father and grandfather were active, after graduation.

The new Columbia director became president of Libbey-Owens-Ford in 1953, after more than 22 years as vice president in charge of sales, and was named chief executive officer in April, 1960.

Battin retires

HENRY W. BATTIN, former staff engineer of gas operations with the Philadelphia Electric Co., Philadelphia, Pa., retired recently after 48 years of continuous service in the gas industry.

Mr. Battin began his career with the Public Service Gas Company, Jersey City, N. J., in 1912 and continued with the company in various locations until 1926. He was with the United Gas Improvement Company, Philadelphia, for 14 years before joining Philadelphia Electric.

From 1929 until 1936 Mr. Battin was active with A. G. A. and presented several papers. For his services he was given the Operating Section Award of Merit.

Gas exploration firm appoints Woods

W. H. WOODS has been elected a vice president of Texas Gas Exploration Corp., Houston, Texas. Mr. Woods was formerly a vice president of Runnels Gas Products Corporation, a wholly owned subsidiary of Union Texas Natural Gas Corporation.

Prior to his election as a vice president of Runnels Gas Products Corporation, he was superintendent of the gas department of Union Oil and Gas Corporation, of Louisiana. For many years prior to this he was active in design and construction work for Gulf Oil Corporation.

The Eunice extraction plant, one of the two largest plants of its type in the U. S., was built under Mr. Woods' direction. The plant is jointly owned by Texas Gas Exploration and Union Texas Natural.

Crawford named director

THE AMERICAN Meter Co., Philadelphia, Pa., has announced the election of Chester S. Crawford as a director.

Mr. Crawford is president and a director of the Whitehall Cement Manufacturing Company, a director of Interstate Railroad, a director of the Portland Cement Association, and a trustee of Lankenau Hospital.

Boyd, Kayser advanced at El Paso Natural

H. Boyd

P. Kayser

DIRECTORS of the El Paso Natural Gas Co., El Paso, Texas, have elected Paul Kayser to the new office of chairman and chief executive officer. Howard Boyd has been named to succeed Mr. Kayser as president. Mr. Kayser had been president of the company since 1928.

The board also elected Arnold R. LaForce as executive vice president. He joined the company in 1956 as financial vice president and director.

Mr. Boyd joined El Paso in 1952 as vice president and assistant general counsel. He became executive vice president in 1957 and has been a director since early 1953. He is a former assistant U. S. District Attorney for the District of Columbia and was with the U. S. Department of Justice.

Commonwealth Natural promotes Starkey, German, Jamerson, Riley

THE BOARD of directors of Commonwealth Natural Gas Corp., Richmond, Va., has elected four staff members as vice presidents of the organization.

Chester E. Starkey, assistant secretary and assistant treasurer from 1951 to 1957 and subsequently assistant to the president, has been promoted to vice president. Osmond T. Jamerson, director of public relations since 1953, has been appointed vice president, public relations. Paul H. Riley, measurement superintendent from 1952 to 1958 and thereafter superintendent of measurement and dispatching, has been advanced to vice president and chief engineer. Harvey S. German, pipeline superintendent from 1953 to 1958 and subsequently superintendent of pipelines and construction, has been named vice president, maintenance and construction.

Before joining Commonwealth, Mr. Starkey, 47, was with Stone and Webster Service Corporation and afterwards was senior auditor of the Virginia State Corporation Commission. He attended William and Mary College and served in the U.S. Air Force during World War II.

Mr. Jamerson, 53, was assistant trust officer of the State Planters Bank; vice president of the National Bank of Commerce in Norfolk, Va.; and president of the Millhiser-Strong Bag Companies in Richmond, Va., prior to joining Commonwealth. He is a graduate of Virginia Military Institute and Harvard Business School.

Mr. Riley, 42, was with natural gas companies in West Virginia and was superintendent of measurement and transmission of the Owens, Libbey-Owens Gas Department before joining Commonwealth.

Prior to joining Commonwealth, Mr. German, 56, was with the Empire Gas and Fuel Company. He also served as pipeline superintendent of Cities Service Gas Company and was chief inspector for the New York engineering firm of Ford, Bacon and Davis.

Crouse appointed

WHIRLPOOL CORP., St. Joseph, Mich., has appointed John M. Crouse, former general sales manager for the RCA-Whirlpool sales department, to the position of general manager of its recently formed special products division. Mr. Crouse will have over-all responsibility for the manufacture, distribution, promotion, advertising, and selling of the company's coin-operated washer, dry-cleaning machine, washer-extractor, and other commercial equipment used in fabric conditioning.

Mr. Crouse joined Whirlpool in 1949 and has held a succession of important positions in the company's sales department, including that of general manager of the laundry equipment division, from 1956 to 1957. From 1957 to 1958 he was director of distribution. He became general sales manager in 1958.

Roach named vice president of new company

D. A. Roach

DAVID A. ROACH, a veteran of 14 years in the pipeline industry, has been named vice president of the newly organized Mid-America Pipeline Co., Tulsa, Okla., with headquarters at Tulsa.

The company is constructing a $71 million pipeline from Texas and New Mexico to cities as far north as St. Paul, Minn., and Madison, Wis.

Before joining Mid-America, Mr. Roach was a vice president of the Phillips Pipeline Co., Bartlesville, Okla. Previously, he had been pipeline engineer and chief engineer for Phillips. Now 41, he was graduated from the University of Nebraska in 1941.

The Mid-America Pipeline system will serve as a common carrier for propane, butane, and natural gas. Nineteen per cent of its stock is owned by the Missouri-Kansas-Texas Lines, one of the few ventures by a railroad into the pipeline field.

Sammis re-elected

WALTER H. SAMMIS, president, Ohio Edison Co., Akron, Ohio, was recently re-elected president of the company at its annual meeting of stockholders. All other present officers were re-elected. A total of 86.7 per cent of outstanding common stock entitled to vote was represented in person or by proxy at the annual meeting.

Upson and Trilsch elected to office by petroleum affiliates

C. E. "CHET" UPSON, general superintendent of communications, Natural Gas Pipe Line Company of America, Chicago, Ill., was elected president of the Petroleum Industry Electrical Association at the recent 32nd annual conference and exhibit at Kansas City, Mo. John D. Trilsch of Trilsch Corp., Houston, Texas, was elected president of Petroleum Electric Supply Association, the suppliers group affiliate in PIEA-PESA.

Other officers named by PIEA are E. B. Dunn, Atlantic Pipe Line Co., vice president, and Fred S. Jones, Platte Pipe Line Co., secretary-treasurer. Directors elected are Delbert R. Wofford, Tennessee Gas Transmission Corp., chairman; James Bowen, Mobil Oil Co.; C. D. Campbell, Houston, Texas Gas and Oil Corp.; and L. E. Cook, Sinclair Pipe Line Co.

C. A. Gunn, Copperweld Sales Co., was elected vice president and Marvin Gunter, Motorola C and E, executive secretary.

Named to the enlarged board of directors of PESA were Felix House, Crouse-Hinds Co.; Pat Wilson, Southwestern Bell Telephone Co.; Harry Holquist, Pipe Line News; Gene Tuel, Railway Communications; George Ullrich, Harrison Equipment Co.; Pat King, Westinghouse Electric; Theil Sharpe, Collins Radio; Haskell Shelton, S and S Radio; W. H. Thomson, General Telephone of Southwest; Mr. Trilsch; Mr. Gunn; and Mr. Gunter.

Dresser names James and Fabian in new appointments

DRESSER Industries, Dallas, Texas, recently announced two promotions. One was the appointment of John V. James as controller of the firm. He will be transferred from Olean, N. Y., to Dallas. The other was the naming of F. G. Fabian to the post of executive vice president.

Mr. James was previously vice president-finance of Clark Brothers Co., Olean, to which position he was advanced in 1958 after having served as assistant controller of Dresser Industries, Dallas. Before joining Dresser in 1957, Mr. James served in various accounting and administrative capacities, including posts with Corning Glass Works and Carr Consolidated Biscuit Company. He is a graduate of the Wharton School of Finance of the University of Pennsylvania, with a bachelor-of-science degree in economics.

Mr. Fabian had been president and general manager of the Dresser Manufacturing division at Bradford, Pa., since 1955. Prior to joining the Dresser organization in 1953, he was associated with several companies and a management consulting firm in the area of Chicago, Ill.

In his new position, Mr. Fabian will assume the responsibility for operations of five oil field divisions in Texas.

Charles Kuhn, who was vice president and sales manager of Dresser Manufacturing division, has been named president of the subsidiary.

Names in the news—a roundup of promotions and appointments

UTILITY

Southern Counties Gas Co. recently announced a series of management promotions. **D. E. Shively** has been appointed administrative specialist in the company's customers department. Mr. Shively, who was at one time staff supervisor of the customers department, has been, more recently, supervisor of stores in the firm's purchases and stores department. **R. H. Watson,** former staff assistant in the accounting department and acting accounting department manager, has been named staff supervisor, reporting to **H. D. Cunningham,** manager of budgets and reports. **J. R. Leman** has been promoted to the post of staff supervisor in the customers department. **M. P. Walker** has succeeded Mr. Shively. Mr. Walker was previously general storekeeper.

The retirement of **D. E. Leader,** division manager in Ogden, Utah, for Mountain Fuel Supply Co., has prompted two executive promotions. Mr. Leader has completed 35 years with Mountain Fuel, 29 of those as Ogden division manager. **Jack E. Stahl,** safety supervisor, distribution division, has succeeded Mr. Leader. Mr. Stahl had been safety supervisor since 1955. Previously he was gas dispatcher and meter shop foreman. **Clyde R. James,** commercial supervisor of another division, has succeeded Mr. Stahl. Mr. James has been in the service of his company for 30 years. In 1947 he was named a district sales and commercial office supervisor, a position he held until the duties were divided and he became commercial supervisor.

Elizabethtown Consolidated Gas Co. has employed **Peter Kassak** as chief engineer. Before joining the firm, Mr. Kassak was a district superintendent for Public Service Electric and Gas Co. He is a graduate of the University of Pennsylvania.

Cincinnati Gas and Electric Co. has expanded the duties of **Arthur C. Cherry,** company executive. Mr. Cherry has become assistant to **George J. Kuehnle, Jr.,** vice president in charge of community relations. A graduate of Yale University, Mr. Cherry joined the company in 1928 and was made manager of gas distribution in 1937. Since 1959 he has been assistant to **Milton J. Pfeiffer,** in charge of the gas department.

Robert A. Modlin, industrial sales manager of East Ohio Gas Co. since 1958, has been promoted to assistant general sales manager. Mr. Modlin started with East Ohio in 1946 as an industrial sales representative. **William H. Harper, Jr.,** has joined the organization as sales promotion manager. Formerly Cleveland regional manager for the Underwood Corp., Mr. Harper will be responsible for developing sales promotional plans for gas appliances and gas usages.

The Connecticut Light and Power Co. has appointed **Robert P. Lee** as assistant to **Paul V. Hayden,** vice president in charge of public and employee relations. In addition to his new duties, Mr. Lee will continue in his present position as manager of the company's area development department. Mr. Lee first joined the company in 1927. Returning to the company in 1936 after an absence, he remained until 1942, when he became president of the Waterbury Buckle Co. In 1951 he rejoined Connecticut Light and Power as an industrial sales engineer and became area development manager in 1952.

Southern Union Gas Co. has named **A. G. Prasil** chief engineer. Mr. Prasil has been with the firm since 1958, when he was employed as engineer. He is a graduate of the University of Wisconsin.

Northern Natural Gas Co. has promoted **C. James Bulla, James P. Coyle,** and **Richard L. Torczon** to newly created posts as gas buyers in the gas purchases division of the gas supply department. Mr. Bulla has been with the company since 1952 and was a staff assistant prior to his promotion. Mr. Coyle, who joined Northern in 1946, and Mr. Torczon, who became associated with the firm in 1957, were previously gas purchase engineers with the company.

MANUFACTURERS

B. J. (Jack) Glascock has been appointed central regional manager in the utility department of the Norge division of Borg-Warner Corp. For the past three years Mr. Glascock has been associated with the Southern Union Gas Co. as sales manager in Arizona. In his new post he will be responsible for the sale of Norge home appliances to utilities in 10 states. The company has also appointed **Robert F. Wammack** as manager for sales of Norge built-in ranges in the Southwest. Before joining the firm, Mr. Wammack was for three years representative for built-in ranges of the Oklahoma Gas Co.

Caloric Appliance Corp. has announced two executive appointments in its architectural porcelain enamel division. **Thomas A. Mulqueen** has been promoted to assistant sales manager. **Frank B. Gibson** has assumed Mr. Mulqueen's former duties. Mr. Mulqueen joined Caloric in 1957. He was previously associated with Miami Window Corp. as a sales representative. Mr. Gibson started with Caloric in 1958. He had previously been vice president-production with Seaporcel Metals. The company has also announced the appointment of **Merrill Preston** as a product engineer. Prior to joining Caloric he was associated with the Florence Stove Co. as chief engineer and with Geo. D. Roper Corp. as a product engineer.

Thomas M. Isaacs has been named director of advertising and sales promotion for the Robertshaw-Fulton Controls Co. He has been program supervisor of industrial advertising for the Reynolds Metal Co. He had been associated with that company since 1952.

Richard von Munkwitz has joined Mueller Climatrol, division of Worthington Corp., as national account sales supervisor. He was

formerly assistant public relations director of the National Warm Air Heating and Air Conditioning Association. He will be responsible for contacts in the government housing field and with buyers of heating and air conditioning equipment who have nationwide operations.

Bert L. Leslie has been appointed by Armstrong Furnace Co. as district manager to cover territory in four states. Associated with the firm since 1949, Mr. Leslie has served in various capacities in its warehousing, purchasing, and production functions. In 1956, he joined the sales department as sales coordinator.

Whirlpool Corp. has advanced several sales executives. Most of the promotions were a result of the recently announced naming of **John M. Crouse,** former general sales manager, to general manager of the new commercial laundry and dry cleaner division. Heading a list of changes is **Harper R. Dowell,** former distribution manager, who has become general manager of distribution and sales. He joined the firm in 1954 as regional sales manager. New general sales manager is **Thomas F. Bartley,** former field sales manager. Mr. Bartley joined Whirlpool in 1953 and was sales manager of ranges from 1955 to 1958. **C. R. Armstrong,** general manager of the Detroit, Mich., sales division since 1958, has been named general manager of branches. He has been succeeded in the Detroit branch by **C. Edward Reiner,** who was, most recently, sales manager of RCA Whirlpool automatic washers. **Raymond A. Muldoon,** national advertising manager since 1958 and an employee of Whirlpool since 1949, has succeeded Mr. Reiner. **Quentin B. Garman,** sales promotion manager of the refrigeration division, has been named national advertising manager, and **Ronald I. Gow** has been promoted from the Atlanta, Ga., branch to assistant national advertising manager. **Sol Goldin,** manager of retail marketing, has added a liaison with industry groups and associations to his responsibilities. As a result of the promotion of **Peter N. Prussing** from West Coast regional manager for RCA Whirlpool sales to the post of general manager of freezer sales to Sears, Roebuck and Co., **James D. Walker** will leave his district managership in the Southeast to replace Mr. Prussing. **Sterling L. Beck, Jr.,** formerly in sales training, has succeeded Mr. Walker. Simultaneously, the formation of a dealer sales development team, headed by **Franklin T. Grimes,** former sales manager of the specialty products division, has been announced. Mr. Grimes will be assisted by **L. Earl Mitchell,** who recently joined the firm.

Walworth Co. has employed **Kenneth L. Hand** as assistant to the marketing manager, **Sidney A. Lewis.** Mr. Hand has come to Walworth from Air Products, where he was a salesman in the industrial gas division.

George B. Sharkey has been named to the newly created post of market specialist for the packaged heating and cooling department of Chrysler Corporation's Airtemp division. For the past year, Mr. Sharkey has served as manager for Airtemp of field distribution on the West Coast. Since he joined Chrysler in 1950, his duties have included West Coast assignments as district representative and district manager in San Francisco, Calif., assistant regional manager, dealer development department, and regional manager.

OTHER

Trunkline Gas Co. has promoted three to newly created posts in its production and supply department. Appointed district managers of exploration were **Raymond E. Fairchild, Robert H. Dickerson,** and **Wallace K. Cox.** Mr. Fairchild was geologist for Pan American Production Co. prior to joining Trunkline in 1956. Before joining the company in 1959 as a staff geologist, Mr. Dickerson was associated with General Geophysical Co., Pan American Production Co., and Skelly Oil Co. Mr. Cox joined Trunkline in 1958 as a district landman. He was formerly employed by Texaco, Inc., and the Lion Oil Co.

Glenn O. Ladd has joined Commonwealth Services as a senior consultant in the rate department. For the past 16 years he has been in charge of rates and contracts for Arkansas-Missouri Power Co. and for a number of years was also supervisor of the firm's power sales.

OBITUARY

J. D. Davis

vice president of United Gas Corporation, died recently in Shreveport, La. A native of Texas, Mr. Davis had been employed by United Gas for more than 35 years. He became vice president last year and prior to that was assistant to the president. He was 59.

Mr. Davis attended the University of Texas and worked at Latex and Beaumont, Texas, for a predecessor of United Gas. He became manager of the district in Jackson, Miss., in 1940, remaining there until 1954 when he was promoted and transferred to the Shreveport general office.

Survivors include his widow, the former Lucy Elizabeth Bailey; two daughters; and two brothers.

Davis M. DeBard

engineering consultant to the gas and electric utility industry, has passed away.

Mr. DeBard was graduated from Cornell University and was associated for 15 years with the Brockton Edison Co., Brockton, Mass. He was a former vice president of Stone and Webster Service Corporation. In 1953 he became a board member of Reddy Kilowatt, the public relations firm, and was a consultant to the company until his death.

Surviving are his widow, Eleanor F. Pratt DeBard; a son; a daughter; and a sister.

CONVENTION CALENDAR

1960

AUGUST

17-19 •Mid-West Gas Association, Gas School and Conference, Iowa State College, Ames, Iowa.

SEPTEMBER

9 •New Jersey Gas Association, Annual Meeting.

12-13 •New England Gas Association, Gas Utility Managers Conference, Wianno Club, Mass.

12-14 •Accident Prevention Conference, Leamington Hotel, Minneapolis, Minn.

15-16 •A. G. A. Textile Processing Symposium, Sedgefield Inn, Greensboro, N. C.

21-23 •Pacific Coast Gas Association, Annual Meeting, Westward Ho Hotel, Phoenix, Ariz.

21-23 •Southeastern Gas Association, Annual Meeting, Sir Walter Hotel, Raleigh, N. C.

23 •Oklahoma Utilities Association, Gas Division Conference, Biltmore Hotel, Oklahoma City, Okla.

OCTOBER

2-5 •American School Food Service Show (where A. G. A. will exhibit), Washington, D. C.

10-12 •Annual Convention of A. G. A. and "Festival of Flame" Exhibit, Atlantic City, N. J.

17-21 •National Metal Exposition (where A. G. A. will exhibit), Philadelphia, Pa.

23-25 •Independent Petroleum Association of America, Annual Meeting, Statler Hilton Hotel, Dallas, Texas.

24-29 •A. G. A. Kitchen Planning Seminar, Michigan State University, East Lansing, Mich.

25-27 •American Standards Association, 11th Annual Conference on Standards, Sheraton-McAlpin Hotel, New York, N. Y.

Personnel service

SERVICES OFFERED

Woman Engineer—French, seeks position in gas industry. Two years experience in research and design of ventilation and of different uses of gas. New York location. Technical translations: English, French, Italian, German, Spanish. Translating work also accepted at home. **1982.**

Aggressive, personable, technical background, B.S., two years graduate work (geology, geophysics, mining engineering), age 24, seeking position that demands effort, offers challenge. Trained for geological exploration but will consider technical sales, other positions. Resume upon request. Available April. **1983.**

June, 1960 graduate, Gas Fuel Technology Dept., Southern Technical Institute (unit of Georgia Tech). Prefers job in technical sales or engineering. Age 27, married, one child. Will relocate. **1984.**

Comptroller, Auditor, Assistant Treasurer—registered CPA, with 11 years public accounting and utility supervisory experience covering gas production, transmission and distribution. Background of securities, registration, internal auditing, corporate taxes, federal and state regulations, budgets, and preparation of rate exhibits. B.S. in accounting and management. Age 36. Salary requirements $12-14,000. Detailed resume on request. **1985.**

CPA-Assistant Controller—of major utility. Ten years' supervisory, diversified experience in public utility department of nation-wide public accounting firm. Five years' responsible, private, major company experience. General accounting, auditing, taxes, budgets. Seeking position as chief accounting or financial officer or assistant thereto with future. Will relocate. Resume on request. **1986.**

Management and/or Promotion—Nine years' experience in engineering, operations, and distribution with medium size natural gas utility (150,000 customers). Conscientious, reliable, and ambitious. Age 29, married, family. B.S. degree in the physical sciences. Prefer southeast or southwest location. Complete resume upon request. **1987.**

Engineer—35 years old, with M.S. degree from Columbia University and 10 years' experience in Structural and Stress Analysis, would like an engineering position in New York City area. Will be available after July 18. **1988.**

Mechanical Engineer—August, 1960 Ph.D. graduate of Oklahoma State University. Prime interest: heat transfer; also Thermodynamics or Fluid-dynamics. Resume and references furnished on request. Married, age 35, draft exempt. **1989.**

Sales and/or Promotion Manager—background 30 years' experience in management, sales management, advertising, sales promotion and sales training at manufacturer and distributor levels in refrigeration, air conditioning—residential, commercial and industrial. Complete resume available upon request. **1990.**

Marketing Research or Sales Administration—10 years, aggressive Southwest utility. Currently marketing research analyst. Previously administrative assistant to marketing director. Responsibilities handled: forecasting, analysis, budgeting, consumer-dealer surveys, sales promotions planning, extensive merchandising, accounting. Married, 31, relocate, $10,000 minimum. **1991.**

Public Relations Executive—Seven years in top level gas industry public relations activities. Extensive background in advertising and sales promotion. Recent activities included direction of creative publicity, special events, press conferences, community, government and employee relations, speech writing, preparation of brochures and booklets, direction of staff personnel, sales training. **1992.**

Sales and Project Engineer—over 20 years' experience in the industrial and commercial use of gas, including application of near and far gas-fired infra-red equipment. Will relocate if necessary. Resume sent upon request. **1993.**

Comptroller—had responsibility since 1944 for all accounting, treasury and corporate secretary functions including budgeting, financing, systems and procedures, taxes and special studies in a medium-size gas utility. Detailed resume on request. **1994.**

POSITIONS OPEN

Superintendent of Gas Measurement—natural gas distribution utility desires aggressive, experienced natural gas measurement man for position of Superintendent, Gas Measurement Department. Responsible for repair, adjustment and testing of residential, commercial and industrial meters (some Roots-Connersville), regulators, pressure volume correctors, temperature compensators, etc., and supervise fabrication and installation of industrial meter settings. Send resume of experience and compensation, references. Location, Great Lakes area. **0929.**

Commercial Gas Salesman—immediate openings for experienced commercial sales representatives in new and expanding natural gas company. Location offers vacationland climate to individuals qualified to develop restaurant, hotel and commercial fields. Excellent employee benefits program; starting salary depends on individual qualifications. Minimum of five years' experience necessary. Submit complete resume, starting salary, to J. G. Barnhart, Employee Relations Dept., The Houston Corp., P.O. Box 10400, St. Petersburg 33, Florida. **0930.**

Manufacturer Representatives—now calling on the gas trade to add the finest gas lamp made to their line. Top commissions. Many areas available. **0931.**

General Sales Manager—small gas utility in north central area, embarking on an extensive expansion program, needs sales manager to supervise division managers, organize gas sales and appliance sales programs. Experience in dealer promotion programs desirable. Send resume of education, experience and salary. **0932.**

Heating and Air Conditioning Sales Engineer—for natural gas utility, located in western North Carolina. An excellent opportunity in a rapidly expanding growth area. Send complete resume. Replies held in confidence. **0934.**

Gas Engineer—fast growing, progressive mid-west natural gas utility, over 16,000 customers, seeks engineer with at least three or four years' gas utility operation experience for position in supervisory capacity. Approximately 30 years of age, technical background and experience in corrosion and cathodic protection, executive ability to supervise this type of work. Send full resume of experience, age and salary requirements. **0935.**

Gas Engineer—Midwest gas utility seeks recent engineering graduate, limited experience, for position with opportunity to learn all phases of gas utility operations and engineering, eventually leading to supervisory position. Prefer man, about 25, interested in personal advancement. Send background, experience, references, and salary requirements. **0936.**

Gas Engineer—unusual opportunity open for gas engineer interested in challenging position in gas industry. Must have ability to grow with increasing responsibilities. Several years' experience in gas utility operations or staff engineering work desirable. **0937.**

Gas Operating Engineer—Southern New England medium-size combination gas and electric utility has opening in gas department which should lead to responsible supervisory position. Prefer young graduate engineer with several years experience in gas operations. Excellent opportunity for qualified man. Send resume of experience, qualifications and salary requirements. **0938.**

Industrial Sales Engineer—well established natural gas utility, serving rapid growing mid-Atlantic region, has opening for graduate engineer, preferably under 35, as industrial representative. Must be familiar with basic process heating applications, including knowledge of boiler conversions. Send resume of education, experience and salary requirements. **0939.**

Industrial Engineer—Northeastern Pennsylvania utility has position open for an industrial engineer with I.E. degree or with equivalent experience. Salary open. A man must contact large commercial and industrial customers to convert them from other fuels. Send complete resume including education, experience, references and salary expected. **0940.**

Manager—small natural gas utility distributing in scattered Southwest towns needs manager to organize and direct operations. Ideal connection for an active semi-retirement where arid climate and high elevation are advantageous and for someone appreciating challenging associations and fascinating country. Send complete resume. All inquiries acknowledged. **0941.**

Operating Vice President—technically-qualified administrator required by stockholder-owned multi-plant water works utility system in East. Must assume responsibility for direction of local supervisory personnel, including optimum utilization of field operating forces, negotiation of union contracts, engineering and scheduling of construction. Send description of present and prior responsibilities relevant to position described, age, present earnings, photograph, minimum of three business references. No inquiries of references will be made without permission. **0942.**

Named to GAMA post

E. A. Nash

E. A. NASH, director of utility sales for the Norge division of Borg-Warner Corp., Chicago, Ill., has been elected chairman of the automatic clothes dryer division of the Gas Appliance Manufacturers' Association.

Mr. Nash is responsible for merchandising appliances with utilities on a national basis.

Winslow elected

AT THE ANNUAL directors' and stockholders' meeting of The Greenwich Gas Co., Greenwich, Conn., the board of directors elected Richard A. Winslow as vice president-sales and Walter E. Swanson as treasurer.

Easy elevates Kelly

RICHARD H. KELLY has been named to the position of general sales manager for Easy Laundry Appliances division of The Murray Corporation of America.

Mr. Kelly was national field sales manager for two years.

Virginia Electric and Power names Hutcheson

VIRGINIA Electric and Power Co., Richmond, Va., has elected R. M. Hutcheson a vice president and appointed T. Justin Moore, Jr., associate general counsel. All other officers of the company were re-elected.

Division vice presidents re-elected were Bernard J. Dorsey, northern division; Raymond H. Goodmon, southern division; James B. Hawkins, eastern division; and Ray C. Hopkins, western division.

A.G.A. advisory council

E. R. ACKER.....Poughkeepsie, N. Y.
J. B. BALMER.....New York, N. Y.
F. M. BANKS.....Los Angeles, Calif.
F. THOMPSON BROOKS..Philadelphia, Pa.
D. B. W. BROWN.....New York, N. Y.
F. D. CAMPBELL.....Cambridge, Mass.
SHELDON COLEMAN.....Wichita, Kan.
C. V. COONS.....New York, N. Y.
STUART COOPER.....Wilmington, Del.
R. E. CRAWFORD.....Minneapolis, Minn.
W. H. ELMER.....Owensboro, Ky.
T. H. EVANS.....Pittsburgh, Pa
L. C. HARVEY.....Syracuse, N. Y.
J. J. HEDRICK.....Chicago, Ill.
H. HANSELL HILLYER.....Savannah, Ga.
H. C. JONES.....Malden, Mass.
D. E. KARN.....Jackson, Mich.
PAUL KAYSER.....El Paso, Texas
JULIUS KLEIN.....Jenkintown, Pa.
D. C. LUCE.....Newark, N. J.
W. G. MAGUIRE.....New York, N. Y.
N. H. MALLON.....Dallas, Texas
C. L. MAY.....Dallas, Texas
D. H. MITCHELL.....Hammond, Ind.
W. E. MUELLER...Colorado Springs, Colo.
G. T. MULLIN.....Minneapolis, Minn.
STUART NICHOLS.....New York, N. Y.
R. W. OTTO.....St. Louis, Mo.
J. C. PETERSON.....Pittsburgh, Pa.
C. P. RATHER.....Birmingham, Ala.
W. F. ROCKWELL, JR.....Pittsburgh, Pa.
J. GORDON ROSS.....Rochester, N. Y.
E. CARL SORBY.....Kankakee, Ill.
E. H. TOLLEFSON.....New York, N. Y.
G. E. WHITWELL.....Philadelphia, Pa.
D. K. YORATH...Edmonton, Alta., Canada
C. H. ZACHRY.....Dallas, Texas

PAR COMMITTEE

Chairman—H. A. Eddins, Oklahoma Natural Gas Co., Tulsa, Okla.

General Promotional Planning Committee
Chairman—Frank M. Foster, Southern California Gas Co., Los Angeles, Calif.

General Research Planning Committee
Chairman—Fred W. Batten, Columbia Gas System Service Corp., New York, N. Y.

General Public Information Planning Committee
Chairman—R. J. Rutherford, Worcester Gas Light Co., Worcester, Mass.

FINANCE COMMITTEE

Chairman—E. R. Acker, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

LABORATORIES MANAGING COMMITTEE

Chairman—William J. Harvey, Public Service Electric and Gas Co., Newark, N. J.

APPROVAL REQUIREMENTS COMMITTEE

Chairman—R. I. Snyder, Southern California Gas Co., Los Angeles, Calif.

Associated organizations

CANADIAN GAS ASSOCIATION
Pres.—N. E. Tanner, Trans-Canada Pipelines, Ltd., Calgary, Alberta.
Man. Dir.—W. H. Dalton, 2532 Yonge St., Toronto, Ontario.

GAS APPLIANCE MANUFACTURERS ASSOCIATION
Pres.—Wendell C. Davis, Cribben and Sexton Co., Chicago, Ill.
Man. Dir.—Harold Massey, 60 East 42nd St., New York, N. Y.

FLORIDA-GEORGIA GAS ASSOCIATION
Pres.—John T. Bills, Peoples Gas System of Florida, North Miami, Fla.
Sec.-Tr.—H. H. Phipps, The Houston Corp., St. Petersburg, Fla.

INDIANA GAS ASSOCIATION
Pres.—Carl D. Rees, Northern Indiana Public Service Co., Hammond, Ind.
Sec.-Tr.—R. A. Steele, Citizens Gas & Coke Utility, 2020 N. Meridian St., Indianapolis, Ind.

THE MARYLAND UTILITIES ASSOCIATION
Pres.—H. Holmes Vogel, Chesapeake & Potomac Telephone Co., Washington, D. C.
Sec.—Frank J. Little, 320 St. Paul Place, Baltimore, Md.

MICHIGAN GAS ASSOCIATION
Pres.—John B. Simpson, Consumers Power Co., Jackson, Mich.
Sec.-Tr.—M. G. Kendrick, Michigan Consolidated Gas Co., Detroit, Mich.

MID-WEST GAS ASSOCIATION
Pres.—J. S. Mayer, Northern States Power Co., Minneapolis, Minn.
Sec.-Tr.—James J. Finnegan, 1163 Northwestern Bank Bldg., Minneapolis, Minn.

NATURAL GAS AND PETROLEUM ASSOCIATION OF CANADA
Pres.—J. R. Reeves, Buffalo, N. Y.
Sec. and Asst. Tr.—H. B. Fry, United Gas & Fuel Co. of Hamilton, Hamilton, Ontario.

NEW ENGLAND GAS ASSOCIATION
Pres.—Gilbert J. Williams, The Connecticut Light & Power Co., Berlin, Conn.
Man. Dir.—Clark Belden, 10 Newbury St., Boston, Mass.

NEW JERSEY GAS ASSOCIATION
Pres.—Frank C. Pesveyc, Public Service Electric & Gas Co., Newark, N. J.
Sec.-Tr.—Ralph E. Martin, New Jersey Natural Gas Co., Asbury Park, N. J.

OKLAHOMA UTILITIES ASSOCIATION
Pres.—George F. Peck, Jr., Lone Star Gas Co., Pauls Valley, Okla.
Sec.—Thelma T. Jones, Suite 2415, Oklahoma Biltmore Hotel, Oklahoma City, Okla.

PACIFIC COAST GAS ASSOCIATION
Pres.—Walter T. Lucking, Arizona Public Service Co., Phoenix, Ariz.
Man. Dir.—Robert D. Scott, 870 Market St., San Francisco, Calif.

PENNSYLVANIA GAS ASSOCIATION
Pres.—W. C. Pierson, Philadelphia Electric Co., Philadelphia, Pa.
Sec.-Tr.—James A. Schultz, Reading Gas Division, United Gas Improvement Co., Reading, Pa.

PENNSYLVANIA NATURAL GAS MEN'S ASSOCIATION
Pres.—James E. Coleman, The Manufacturers Light & Heat Co., Pittsburgh, Pa.
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